

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.95
Test oil : ISO 4113

Combination No. : 0 402 746 909

Injection pump
Pump designation : PES6P120A320RS7236
EP type number : 0 412 726 848

Governor
Governor design. : RQV275...1000PA1001
: -1
Governor no. : 0 421 813 936

Cust. part No. : CCEP 5116A PROJ.171

Customer-spec. information
Customer : RVI
Motor : MIDR 063540 J/3
Power KW : 306.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 310.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -8.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 31.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 310.0

A02

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 302.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : ± 5

rack travel mm : -9.70
Rated speed rpm : 1210
Tolerance 1/min : ± 15

rack travel mm : -13.25
Tolerance mm : ± 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 246.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -8.60
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm max. : < -7.20

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : -5.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -5.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : -3.80
Tolerance mm : \pm 0.20

Pressure hPa : 600
rack travel mm : -0.95
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 225

Check
speed 1/min : > 80
Check
speed 1/min : < 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

A03

rack travel mm : -5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : -8.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.95
Test oil : ISO 4113
Combination No. : 0 402 746 931
Injection pump
Pump designation : PES6P120A320RS7236
EP type number : 0 412 726 848
Governor
Governor design. : RQV275...1000PA1001
: -2
Governor no. : 0 421 813 989

Cust. part No. : CCEP5128A 66-194

Customer-spec. information
Customer : RVI
Motor : MIDR 063540 N/3
Power KW : 283.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 19.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm3/1000 strokes : 290.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 5.0

Speed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : -8.20
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 31.0
Tolerance
cm3/1000 strokes : \pm 2.5
Check tolerance
cm3/1000S. : \pm 5.0

Speed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1190

Rack travel in mm : 13.20
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 290.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 5.0

Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 301.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

rack travel mm : -9.30
Rated speed rpm : 1205
Tolerance 1/min : \pm 15

rack travel mm : -12.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 247.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -8.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm max. : $<$ -6.80

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 600
Rated speed rpm : 1000

Tolerance mm : \pm 0.10
 Rated speed rpm : 600
 rack travel mm : -4.50
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1000

 Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : -3.80
 Tolerance mm : \pm 0.30

MEASUREMENT

Rated speed rpm : 500

 Pressure hPa : 240
 rack travel mm : -2.60
 Tolerance mm : \pm 0.20

 Pressure hPa : 480
 rack travel mm : -0.75
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 195

 Check
 speed 1/min : > 80
 Check
 speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 1000
 Del. quantity
 cm3/1000 strokes : 270.0
 Tolerance
 cm3/1000 strokes : \pm 4.0
 Check tolerance
 cm3/1000S. : \pm 7.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 600
 rack travel mm : -4.50
 Tolerance mm : \pm 0.10
 Del. quantity
 cm3/1000 strokes : 159.0
 Tolerance
 cm3/1000 strokes : \pm 5.0
 Check tolerance
 cm3/1000S. : \pm 8.0
 Spreed
 Tolerance
 cm3/1000 strokes : 8.0
 Check tolerance
 cm3/1000S. : 12.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 167.0
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Del. quantity
 cm3/1000 strokes : 160.0
 Tolerance
 cm3/1000 strokes : \pm 10.0
 Check tolerance
 cm3/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

 Rack travel in mm : -8.20
 Tolerance mm : \pm 0.10
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : \pm 2.5
 Check tolerance
 cm3/1000S. : \pm 5.0
 Spreed
 Tolerance
 cm3/1000 strokes : 6.0
 Check tolerance
 cm3/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.08.95
Test oil : ISO 4113

Combination No. : 0 400 866 169

Injection pump
Pump designation : PES6A85D41G, 3RS2611
EP type number : 0 410 886 902

Governor
Governor design. : RSV325...1250A2C540
: -3L
Governor no. : 0 420 232 565

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F6L913
Power KW : 89.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

A09

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 63.0

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 2.5

Spreed

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 2.5

Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.50
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1365
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1525

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 7.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 440
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 10.80
Tolerance mm : \pm 0.10

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.80
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 7.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.05.95
Test oil : ISO 4113
Combination No. : 9 400 030 696
Injection pump
Pump designation : PES6A95D320RS2881
EP type number : 9 410 037 215
Governor
Governor design. : RSV475...1250A0C826R
Governor no. : 9 420 034 700

Cust. part No. :

Customer-spec. information
Customer : CUMMINS
Motor : 6BT - 165 PS

TEST BENCH REQUIREMENTS

Inlet line : 1.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 207.0
Tolerance bar : ± 3.0
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 475
 Rack travel in mm : 5.10
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 16.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring
 pre-tension
 click setting x : 2.50

CONTROL LEVER

control lever
 position degree : 54.5
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.10
 Rated speed rpm : 1300
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1395
 Tolerance 1/min : \pm 15

rack travel mm : 1.20
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1450

LOW IDLE

control lever
 position degree : 27.5
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
 CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 475
 rack travel mm : 5.10
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 540
 Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 12.15
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 rack travel mm : 12.15
 Tolerance mm : \pm 0.10

Rated speed rpm : 800
 rack travel mm : 12.15
 Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 800
 Pressure hPa : 1000
 rack travel mm : 12.15
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 Pressure hPa : 505
 rack travel mm : 11.10
 Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 800
 Pressure hPa : -
 rack travel mm : 8.55
 Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 800
rack travel mm : 12.15
Tolerance mm : \pm 0.05
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 7.0
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.10.95
Test oil : ISO 4113
Combination No. : 0 403 246 051
Injection pump
Pump designation : PES6MW100/720RS1526
EP type number : 0 413 206 025

Governor
Governor design. : RQV300...1200MW132
: -18
Governor no. : 0 420 083 337

Cust. part No. : 0260748602

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 98.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance	
cm3/1000 strokes :	4.5
Check tolerance	
cm3/1000S. :	7.0

Rated speed rpm :	300
Rack travel in mm :	4.00
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	12.0
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S. :	+ 4.5
Spreed	
Tolerance	
cm3/1000 strokes :	2.0
Check tolerance	
cm3/1000S. :	4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1253
guide sleeve	
travel mm :	7.33
Tolerance mm :	+ 0.15
Rated speed rpm :	300
guide sleeve	
travel mm :	1.01
Tolerance mm :	+ 0.20
Rated speed rpm :	811
guide sleeve	
travel mm :	4.16
Tolerance mm :	+ 0.25
Rated speed rpm :	560
guide sleeve	
travel mm :	3.08
Tolerance mm :	+ 0.25
Rated speed rpm :	1750
guide sleeve	
travel mm :	13.50
Tolerance mm :	+ 0.50

GUIDE SLEEVE POSITION

control lever	
position degree :	125
Rated speed rpm :	1375
Rack travel in mm :	10.00
Tolerance mm :	+ 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1200
Aneroid pressure	
hPa :	1000
Del. quantity	
cm3/1000 strokes :	98.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 3.0
Spreed	
Tolerance	
cm3/1000 strokes :	4.5
Check tolerance	
cm3/1000S. :	7.0

CONTROL LEVER

control lever	
position degree :	120.0

RATED SPEED

rack travel mm :	10.90
Rated speed rpm :	1245
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1390
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1500

LOW IDLE

control lever	
position degree :	73.0

Setting point w/out bumper spring

Rated speed rpm :	200
-------------------	-----

CRT mm min. :	> 4.50
---------------	--------

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.90
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 9.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 1.30
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.65
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 61.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed

Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000s. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.04.96
Test oil : ISO 4113

Combination No. : 0 402 746 953

Injection pump
Pump designation : PES6P120A32ORS7294
EP type number : 0 412 726 895

Governor
Governor design. : RQV275...1000PA1001
: -1
Governor no. : 0 421 813 936

Cust. part No. : CCEP-5135 66-213

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 063540 J/J3
Power KW : 306.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.70

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 13.70
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 309.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -8.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1086
guide sleeve
travel mm : 8.46
Tolerance mm : ± 0.10

Rated speed rpm : 275
guide sleeve
travel mm : 1.29
Tolerance mm : ± 0.10

Rated speed rpm : 773

guide sleeve
travel mm : 6.09
Tolerance mm : ± 0.20

Rated speed rpm : 343
guide sleeve
travel mm : 2.33
Tolerance mm : ± 0.20

Rated speed rpm : 393
guide sleeve
travel mm : 2.99
Tolerance mm : ± 0.20

Rated speed rpm : 490
guide sleeve
travel mm : 3.81
Tolerance mm : ± 0.20

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1185

Rack travel in mm : 12.60
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 309.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 302.0
tolerance degree : ± 4.0

RATED SPEED
 rack travel mm : -1.00
 Rated speed rpm : 1080
 Tolerance 1/min : \pm 5

 rack travel mm : -9.70
 Rated speed rpm : 1220
 Tolerance 1/min : \pm 15

 rack travel mm : -13.25
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 246.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : -8.60
 Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm max. : $<$ -7.20

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000
 Tolerance mm : \pm 0.10

Rated speed rpm : 500
 rack travel mm : -5.50
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1000

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : -4.90

Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 240
 rack travel mm : -3.70
 Tolerance mm : \pm 0.20

Pressure hPa : 600
 rack travel mm : -0.85
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
 Rated speed rpm : $<$ 225

Check
 speed 1/min : $>$ 80
 Check
 speed 1/min : $<$ 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 286.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 500
 rack travel mm : -5.50
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 137.0
 Tolerance
 cm³/1000 strokes : \pm 5.0
 Check tolerance
 cm³/1000S. : \pm 8.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

Aneroid pressure
 hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : -8.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 28.10.94
Test oil : ISO 4113
Combination No. : 0 402 036 744
Injection pump
Pump designation : PES6P120A720/3LS3255
EP type number : 0 412 026 739

Governor
Governor design. : RQV300...1000PA876
: -12
Governor no. : 0 421 813 897

Cust. part No. : 3-7039

Customer-spec. information
Customer : MAN
Motor : D2866LF05
Power KW : 272.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 067
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 15.00
Tolerance mm : ± 1.50
Firing order : 6- 2- 4- 1- 5-
: 3
Phasing : 0-60-120-180-240
: -300
Start of delivery mark
Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 15.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.00

Tolerance mm : \pm 0.10

Del. quantity

cm3/1000 strokes : 20.0

Tolerance

cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Spread

Tolerance

cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1100

Rack travel in mm : 16.50

Tolerance mm : \pm 1.30

CONTROL LEVER

control lever

position degree : 302.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.10

Rated speed rpm : 1045

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1165

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 258.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 300

rack travel mm : 5.00

Tolerance mm : \pm 0.10

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 15.15

Tolerance mm : \pm 0.05

Rated speed rpm : 1000

rack travel mm : 15.15

Tolerance mm : \pm 0.05

Rated speed rpm : 700

rack travel mm : 8.00

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1200

rack travel mm : 15.15

Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 12.10

Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 470
rack travel mm : 14.20
Tolerance mm : \pm 0.20

Pressure hPa : 110
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
rack travel mm : 8.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Spreed
Tolerance
cm³/1000 strokes : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 139.0

Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.96
Test oil : ISO 4113

Combination No. : 0 402 746 894

Injection pump
Pump designation : PES6P110A320RS7208
EP type number : 0 412 716 803

Governor
Governor design. : RQV275...1175PA942
: -1K
Governor no. : 0 421 815 244

Cust. part No. : CCEP 5100A

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDRO60226 M
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 14.05
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 1175

Del. quantity
cm³/1000 strokes : 171.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 275

Rack travel in mm : -8.80
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : \pm 2.5

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1256
guide sleeve
travel mm : 9.17
Tolerance mm : \pm 0.25

Rated speed rpm : 275
guide sleeve
travel mm : 1.00
Tolerance mm : \pm 0.25

Rated speed rpm : 888

guide sleeve
travel mm : 6.57
Tolerance mm : \pm 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 2.39
Tolerance mm : \pm 0.25

Rated speed rpm : 440
guide sleeve
travel mm : 3.01
Tolerance mm : \pm 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.92
Tolerance mm : \pm 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1400

Rack travel in mm : 13.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

rack travel mm : -10.05
Rated speed rpm : 1430
Tolerance 1/min : \pm 15

rack travel mm : -13.55
Tolerance mm : \pm 0.55
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 60.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -8.80
Tolerance mm : \pm 0.20

Rated speed rpm : 200

CRT mm max. : $<$ -8.20

Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1175

Rated speed rpm : 700
rack travel mm : -0.70
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : -6.05
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : -0.35
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1175

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Pressure hPa : 1000

Rated speed rpm : 1175
Pressure hPa : -
rack travel mm : -3.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1175

Pressure hPa : 240
rack travel mm : -2.70
Tolerance mm : \pm 0.20

Pressure hPa : 520
rack travel mm : -1.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 150
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 130
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
rack travel mm : -6.05
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Aneroid pressure	
hPa	: -
Rated speed rpm	: 500
Del. quantity	
cm ³ /1000 strokes	: 75.0
Tolerance	
cm ³ /1000 strokes	: +- 1.0
Check tolerance	
cm ³ /1000S.	: +- 3.5

STARTING FUEL DELIVERY

Rated speed rpm	: 100
Del. quantity	
cm ³ /1000 strokes	: 105.0
Tolerance	
cm ³ /1000 strokes	: +- 15.0
Check tolerance	
cm ³ /1000S.	: +- 19.0

LOW IDLE

Rated speed rpm	: 275
Rack travel in mm	: -8.80
Tolerance mm	: +- 0.20
Del. quantity	
cm ³ /1000 strokes	: 21.0
Tolerance	
cm ³ /1000 strokes	: +- 2.5
Check tolerance	
cm ³ /1000S.	: +- 5.0
Speed	
Tolerance	
cm ³ /1000 strokes	: 4.5
Check tolerance	
cm ³ /1000S.	: 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.03.97
Test oil : ISO 4113

Combination No. : 0 402 746 957

Injection pump
Pump designation : PES6P120A720RS7292
: -1
EP type number : 0 412 726 939

Governor
Governor design. : RQV350...115UPA1074
: -2K
Governor no. : 0 421 815 367

Cust. part No. : 0250741002

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 157.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

B02

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 3.30
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm	:	1150
<hr/>		
Rack travel in mm	:	14.10
Tolerance mm	:	+ 0.05
<hr/>		
Del. quantity		
cm ³ /1000 strokes	:	269.0
<hr/>		
Tolerance		
cm ³ /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance		
cm ³ /1000S.	:	+ 4.0
<hr/>		
Speed		
<hr/>		
Tolerance		
cm ³ /1000 strokes	:	8.0
<hr/>		
Check tolerance		
cm ³ /1000S.	:	12.0
<hr/>		

Rated speed rpm	:	350
<hr/>		
Rack travel in mm	:	6.00
Tolerance mm	:	+ 0.10
Del. quantity		
cm ³ /1000 strokes	:	13.0
Tolerance		
cm ³ /1000 strokes	:	+ 3.0
Check tolerance		
cm ³ /1000S.	:	+ 6.0
Speed		
Tolerance		
cm ³ /1000 strokes	:	4.0
Check tolerance		
cm ³ /1000S.	:	8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	1206
guide sleeve		
travel mm	:	9.35
Tolerance mm	:	+ 0.15
<hr/>		
Rated speed rpm	:	350
guide sleeve		
travel mm	:	1.53
Tolerance mm	:	+ 0.20
<hr/>		
Rated speed rpm	:	855

guide sleeve		
travel mm	:	5.56
Tolerance mm	:	+ 0.25

Rated speed rpm	:	550
guide sleeve		
travel mm	:	3.17
Tolerance mm	:	+ 0.25

Rated speed rpm	:	1480
guide sleeve		
travel mm	:	13.50
Tolerance mm	:	+ 0.50

GUIDE SLEEVE POSITION

control lever		
position degree	:	- 1
Rated speed rpm	:	1331

Rack travel in mm	:	13.50
Tolerance mm	:	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1150
Aneroid pressure		
hPa	:	1500
Del. quantity		
cm ³ /1000 strokes	:	269.0
Tolerance		
cm ³ /1000 strokes	:	+ 1.0
Check tolerance		
cm ³ /1000S.	:	+ 4.0
Speed		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000S.	:	12.0

CONTROL LEVER

control lever		
position degree	:	109.0
tolerance degree	:	+ 4.0

RATED SPEED		
rack travel mm	:	13.40
Rated speed rpm	:	1195
Tolerance 1/min	:	+ 5

rack travel mm	:	4.00
Rated speed rpm	:	1325
Tolerance 1/min	:	+ 15

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : $>$ 6.90

Testing:

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.10
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 13.95
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 13.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1500
rack travel mm : 14.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 10.10
Tolerance mm : \pm 0.15

MEASUREMENT

B04

Rated speed rpm : 1150

Pressure hPa : 400
rack travel mm : 10.90
Tolerance mm : \pm 0.05

Pressure hPa : 850
rack travel mm : 12.50
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500
Rated speed rpm : 750
rack travel mm : 13.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.11.91
Test oil : ISO-4113
Combination No. : 0 400 866 154
Injection pump
Pump designation : PES6A100D320/3RS2691
: -4
EP type number : 9 410 230 030
Governor
Governor design. : RSV450...1100AOC2241
: R
Governor no. : 0 420 233 256

Cust. part No. :

Customer-spec. information
Customer : C.D.C.
Motor : 6CT830
Power KW : 134.2

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

: C.D.C. # 3915995

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjustment without torque-control
spring retainer with 0,5 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : 11.0

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 104.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 450.0

Rack travel in mm : 5.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.00
Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 4.50

Spread

Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

B07

governor spring
pre-tension
click setting x : ?

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 104.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 53.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 1145.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1225.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00
Rated speed rpm : 1230.0

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 33.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.3

Rated speed rpm : 100

CRT mm min. : 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.80
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.25
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.10
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.10
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : -
rack travel mm : 10.75
Tolerance mm : ± 0.05

Pressure hPa : 305
rack travel mm : 11.15
Tolerance mm : ± 0.05

Pressure hPa : 425
rack travel mm : 11.70
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 114.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 81.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 145.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 15.00

LOW IDLE

Rated speed rpm : 450.0

Rack travel in mm : 5.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.50
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.12.92
Test oil : ISO-4113

Combination No. : 0 402 036 743

Injection pump
Pump designation : PES6P120A720/3LS3255
EP type number : 0 412 026 739

Governor
Governor design. : RQ300/1000PA813-19
Governor no. : 0 421 801 561

Cust. part No. :

Customer-spec. information
Customer : MAN
Motor : D2866LF05
Power KW : 272.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.00

x inside diameter : 3.00
x length mm : 1000

B09

REMARKS

: MAN-NR. 3-7037

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5
: - 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 245.00

Tolerance
cm3/1000 strokes : ± 1.00

Check tolerance
cm3/1000S. : ± 4.00

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300.0

Rack travel in mm : 5.00
Tolerance mm : ± 0.20

Del. quantity
cm3/1000 strokes : 20.00
Tolerance
cm3/1000 strokes : ± 3.00
Check tolerance
cm3/1000S. : ± 6.00

Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -2
Rated speed rpm : 550

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 245.00
Tolerance
cm3/1000 strokes : ± 1.00
Check tolerance
cm3/1000S. : ± 4.00

Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED
rack travel mm : 20.0
Rated speed rpm : 550

rack travel mm : 14.10
Rated speed rpm : 1052.5
Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1170.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.0

Rated speed rpm : 200

CRT mm min. : 6.50

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.20

rack travel mm : 2.00
Rated speed rpm : 380.0
Tolerance 1/min : ± 20.0

TORQUE CONTROL

Dimension a mm : ?
Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 15.60
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.15
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : -
rack travel mm : 11.90
Tolerance mm : ± 0.10

Pressure hPa : 110
rack travel mm : 12.15
Tolerance mm : ± 0.05

Pressure hPa : 470
rack travel mm : 14.00
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 220

Check
speed 1/min : 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 244.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.00
Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 300.0

Rack travel in mm : 5.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.05.97
Test oil : ISO-4113

Combination No. : 0 402 046 858

Injection pump
Pump designation : PES6P110A320LS3330
EP type number : 0 412 016 745

Governor
Governor design. : RQV350...1250PA1127K
Governor no. : 0 421 815 384

Cust. part No. :

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-408
Power KW : 138.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.80

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 600

REMARKS

: NAVISTAR #1823105C91

Start-of-delivery blocking at start of
delivery of cylinder no. 1.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.15

Rack travel in mm : 15.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 112.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm3/1000S. : \pm 3.00

Spreed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 7.70
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 28.00

Tolerance
cm3/1000 strokes : \pm 2.00

Check tolerance
cm3/1000S. : \pm 5.00

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 2.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 4.30
Tolerance mm : \pm 0.20

Rated speed rpm : 850
guide sleeve
travel mm : 7.20
Tolerance mm : \pm 0.20

Rated speed rpm : 1250
guide sleeve
travel mm : 9.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1450
guide sleeve
travel mm : 11.20

Tolerance mm : \pm 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 112.00

Tolerance
cm3/1000 strokes : \pm 1.00

Check tolerance
cm3/1000S. : \pm 3.00

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 6.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 1305.0
Tolerance 1/min : \pm 15.0

rack travel mm : 4.00
Rated speed rpm : 1455.0
Tolerance 1/min : \pm 5.0

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 7.7

Testing:

Rated speed rpm : 325
rack travel mm : 7.70
Tolerance mm : ± 0.10

Rated speed rpm : 275

CRT mm max. : 8.50

TORQUE CONTROL

Dimension a mm : ?
Rated speed rpm : 850
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 1250
rack travel mm : 13.10
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : ± 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 13.10
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : ± 0.20

Pressure hPa : 250
rack travel mm : 11.35
Tolerance mm : ± 0.05

Pressure hPa : 450
rack travel mm : 12.50
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 280

Check
speed 1/min : 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 128.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.00
Tolerance mm : ± 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 88.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 140.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 25.00

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 28.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 5.00
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.06.97
Test oil : ISO-4113

Combination No. : 0 402 648 971

Injection pump
Pump designation : PE8P120A320LS7830
EP type number : 0 412 628 844

Governor
Governor design. : RQV350...1050PA1109
Governor no. : 0 421 814 078

Cust. part No. :

Customer-spec. information
Customer : MTU
Motor : 8V 183 TE72

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.00

x inside diameter : 3.00
x length mm : 1000

REMARKS

* = Set at reduced-delivery stop.

APPLICATION

Ship

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 8-7-2-6-3-5-4-1

Phasing : 0-45-90-135-180-225
 : -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 261.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 15.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 6.00

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.53
Tolerance mm : ± 0.20

Rated speed rpm : 570
guide sleeve
travel mm : 3.57
Tolerance mm : ± 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 5.69
Tolerance mm : ± 0.25

Rated speed rpm : 1204
guide sleeve
travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1170

Rack travel in mm : 12.35
Tolerance mm : ± 0.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 2000
Del. quantity
cm³/1000 strokes : 261.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.35
Rated speed rpm : 1105.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1185.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 66.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : 6.70

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : ± 0.30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.35
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.00
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 8.45
Tolerance mm : ± 0.05

Pressure hPa : 1200
rack travel mm : 13.05
Tolerance mm : ± 0.20

Pressure hPa : 2000
rack travel mm : 13.35
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 254.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 195.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 5.00

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 99.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.50
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 345.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000s. : \pm 6.00
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.02.94
Test oil : ISO-4113
Combination No. : 0 403 466 146
Injection pump
Pump designation : PES6MW100/120RS1137
: -1
EP type number : 0 413 406 157
Governor
Governor design. : RSV500...1100MW2A335
: -7
Governor no. : 0 420 085 235
Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6CTA
Power KW : 172.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

: CDC #3926219

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : 11.00

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 132.50

Tolerance
cm3/1000 strokes : ± 1.00

Check tolerance
cm3/1000S. : ± 4.00

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.0

Rated speed rpm : 500

Rack travel in mm : 6.40
Tolerance mm : ± 0.10

Del. quantity
cm3/1000 strokes : 21.00
Tolerance
cm3/1000 strokes : ± 2.00
Check tolerance
cm3/1000S. : ± 4.50

Spreed
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 132.50

Tolerance
cm3/1000 strokes : ± 1.00
Check tolerance
cm3/1000S. : ± 4.00
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1160.0
Tolerance 1/min : ± 10.0

rack travel mm : 4.00
Rated speed rpm : 1265.0
Tolerance 1/min : ± 5.0

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 81.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 6.40

Rated speed rpm : 100

CRT mm min. : 19.0

Testing:

Rated speed rpm : 500
rack travel mm : 6.40
Tolerance mm : ± 0.10

SET IDLE AUXILIARY SPRING

rack travel mm : 4.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.3^e
Tolerance mm : ± 0.05

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.50
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : -
rack travel mm : 11.45
Tolerance mm : ± 0.10

Pressure hPa : 275
rack travel mm : 12.15
Tolerance mm : ± 0.05

Pressure hPa : 425
rack travel mm : 13.30
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 132.50
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 4.00
Check tolerance
cm³/1000S. : 7.5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 130.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 13.00

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 6.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 21.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.50
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.97
Test oil : ISO 4113

Combination No. : 9 400 030 696

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1250A0C826R
Governor no. : 9 420 034 700

Cust. part No. : 3928662

Customer-spec. information
Customer : CUMMINS
Motor : 6BT - 165 HP

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.60

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 1315

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1415

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1500

rack travel mm : 4.00

Tolerance mm : \pm 0.05

Rated speed rpm : 1420

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 85.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 575
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.60
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 12.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 655
rack travel mm : 12.30
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 11.70
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 113.8
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.8
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

Note remarks

Edition : 02.06.97
Test oil : ISO 4113

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006

Cust. part No. :

```
Customer-spec. information
Customer      : CDC
Motor         : 6 CT 8.3
Power KW      : 145.0
```

Inlet Line : 2.

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure : 208.5
bar
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : \pm 1.0

Prestroke mm	:	2.85
Tolerance mm	:	+ 0.05
Check		
tolerance mm	:	+ 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

```
Phasing      : 0-60-120-180-240
              : -300
```

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

```

°NW after s.o.d. : 10.00
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

```

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 121.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 121.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.10
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 305
rack travel mm : 11.70
Tolerance mm : \pm 0.20

Pressure hPa : 220
rack travel mm : 11.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.11.97
Test oil : ISO 4113

Combination No. : 0 400 466 086

Injection pump
Pump designation : PES6A75D410/3RS1326
EP type number : 0 410 476 977

Governor
Governor design. : RSV325...900A7C602L
Governor no. : 0 420 232 320

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F6L912

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

C01

x length mm : 600

REMARK

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 10.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed

Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 325

Rack travel in mm : 7.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 4.5
Spreed
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 3.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 880
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 44.0
Tolerance
cm3/1000 strokes : \pm 0.5
Check tolerance
cm3/1000S. : \pm 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 3.5

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.20
Rated speed rpm : 925
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 960
Tolerance 1/min : \pm 15

CO2

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1050

rack travel mm : 4.00
Rated speed rpm : 970
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 25.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 7.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 880
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 10.30
Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.20

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 12.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 4.5

Speed

Tolerance

cm³/1000 strokes : 2.0

Check tolerance

cm³/1000S. : 3.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.97
Test oil : ISO 4113
Combination No. : 0 403 244 036
Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018
Governor
Governor design. : RQV300...1300MW132
: -5
Governor no. : 0 420 083 308
Cust. part No. : 0240740902

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed

Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 4.00
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1353
guide sleeve
travel mm : 7.76
Tolerance mm : \pm 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 0.91
Tolerance mm : \pm 0.25

Rated speed rpm : 1140
guide sleeve
travel mm : 5.88
Tolerance mm : \pm 0.25

Rated speed rpm : 629
guide sleeve
travel mm : 3.15
Tolerance mm : \pm 0.25

Rated speed rpm : 679
guide sleeve
travel mm : 3.53
Tolerance mm : \pm 0.25

Rated speed rpm : 800
guide sleeve
travel mm : 4.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1596
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1690
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 120
Rated speed rpm : 1500

Rack travel in mm : 10.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 700
Del. quantity
cm3/1000 strokes : 87.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0
Spread
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1435
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 10.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 230
rack travel mm : 0.20

C06

Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.97
Test oil : ISO 4113
Combination No. : 0 403 244 036A
Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018
Governor
Governor design. : RQV300...1300MW132
: -5
Governor no. : 0 420 083 308
Cust. part No. : 0240740902

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1270
Rack travel in mm : 11.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 4.00
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1353
guide sleeve
travel mm : 7.02
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 0.91
Tolerance mm : \pm 0.20

Rated speed rpm : 1090
guide sleeve
travel mm : 5.21
Tolerance mm : \pm 0.25

Rated speed rpm : 790
guide sleeve
travel mm : 3.98
Tolerance mm : \pm 0.25

Rated speed rpm : 1759
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1870
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : VL

control lever
position degree : 115
Rated speed rpm : 1500

Rack travel in mm : 10.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1270
Aneroid pressure
hPa : 700

Del. quantity
cm3/1000 strokes : 87.0
Tolerance

cm3/1000 strokes : \pm 1.0
Check tolerance

cm3/1000S. : \pm 3.0
Spread

Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.10
Rated speed rpm : 1310
Tolerance 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0
Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 4.70

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1270
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 10.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100

C10

Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.01.98
Test oil : ISO 4113
Combination No. : 0 401 846 370
Injection pump
Pump designation : PE6P110A320RS157
EP type number : 0 411 816 108
Governor
Governor design. : RQV250...550/1150PA1
: 40R
Governor no. : 0 421 813 184
Cust. part No. : 516208005011

Customer spec. information
Customer : STEYR
Motor : 7 FA
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Del. quantity
cm3/1000 strokes : 170.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 4.0

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 250

Rack travel in mm : 6.50
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 16.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 5.5

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 900

Del. quantity
cm3/1000 strokes : 170.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 10.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 7.90

Testing:

Rated speed rpm : 250
rack travel mm : 6.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : \pm 30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.75
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 300
rack travel mm : 11.00
Tolerance mm : \pm 0.10
Pressure hPa : 380
rack travel mm : 11.75
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 6.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.01.98
Test oil : ISO 4113

Combination No. : 0 402 736 842AA

Injection pump
Pump designation : PES6P120A120RS7281
EP type number : 0 412 726 890

Governor
Governor design. : RQV400...1250PA1060
: -1K
Governor no. : 0 421 815 344

Cust. part No. : 3933296

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 119.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 6.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.35

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 153.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 15.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1313
guide sleeve
travel mm : 7.14
Tolerance mm : \pm 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 0.91
Tolerance mm : \pm 0.20

Rated speed rpm : 936
guide sleeve
travel mm : 4.64
Tolerance mm : \pm 0.25

Rated speed rpm : 640

guide sleeve
travel mm : 3.04
Tolerance mm : \pm 0.25

Rated speed rpm : 1740
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 153.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.30
Rated speed rpm : 1325
Tolerance 1/min : \pm 15

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : \pm 5

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 47.0

tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 400

CRT mm min. : $>$ 5.80

Testing:

Rated speed rpm : 420

rack travel mm : 6.00

Tolerance mm : \pm 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 13.35

Tolerance mm : \pm 0.05

Rated speed rpm : 800

rack travel mm : 12.00

Tolerance mm : \pm 0.20

Rated speed rpm : 500

rack travel mm : 11.60

Tolerance mm : \pm 0.20

Rated speed rpm : 900

rack travel mm : 12.40

Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250

Pressure hPa : 1200

Rated speed rpm : 1250

Pressure hPa : -

rack travel mm : 9.15

Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 310

rack travel mm : 12.30

Tolerance mm : \pm 0.30

Pressure hPa : 175

rack travel mm : 10.20

Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 100

Rated speed rpm : $<$ 280

Check

speed 1/min : $>$ 80

Check

speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 800

Rated speed rpm : 800

Del. quantity

cm³/1000 strokes : 133.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

rack travel mm : 11.60

Tolerance mm : \pm 0.20

Aneroid pressure

hPa : -

Rated speed rpm : 1250

Del. quantity

cm³/1000 strokes : 84.0

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 13.50

Tolerance mm : \pm 0.50

Del. quantity

cm³/1000 strokes : 155.0

Tolerance

cm³/1000 strokes : \pm 20.0

Check tolerance

cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 420

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 15.5
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.02.98

Test oil : ISO 4113

Combination No. : 0 402 736 858

Injection pump

Pump designation : PES6P110A12ORS7214

EP type number : 0 412 716 805

Governor

Governer design. : RQV350...1200PA964

: -28K

Governer no. : 0 421 815 428

Cust. part No. : 3282464

Customer-spec. information

Customer : CUMMINS

Motor : 6CTA-A

Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.40

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 5.50

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 148.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200
guide sleeve
travel mm : 9.10
Tolerance mm : \pm 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 1.80
Tolerance mm : \pm 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.20

Rated speed rpm : 700
guide sleeve
travel mm : 6.10
Tolerance mm : \pm 0.20

Rated speed rpm : 1400
guide sleeve
travel mm : 10.90
Tolerance mm : \pm 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1330

Rack travel in mm : 16.50
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 148.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1385
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : $>$ 7.20

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Rated speed rpm : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1200

Pressure hPa : -
rack travel mm : 7.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1200

Pressure hPa : 575
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 225
rack travel mm : 8.95
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 290

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

rack travel mm : 11.00
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.02.98

Test oil : ISO 4113

Combination No. : 0 401 816 706

Injection pump

Pump designation : PE6P120A300RS3075

EP type number : 0 411 826 719

Governor

Governor design. :

Governor no. :

Cust. part No. : 846681 P02 v.11.81

Customer-spec. information

Customer : PENTA

Motor : TD120FG

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.65

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.90

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 244.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 244.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 11.90

Tolerance mm : \pm 0.10

LOW IDLE

Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.98
Test oil : ISO 4113

Combination No. : 0 400 466 090

Injection pump
Pump designation : PES6A75D410/3RS1326
EP type number : 0 410 476 977

Governor
Governor design. : RSV325...1400A8C495L
Governor no. : 0 420 232 302

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F6L912

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

C25

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed

Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.0
Spread
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.5

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.20
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : \pm 15

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1675

rack travel mm : 4.00
Rated speed rpm : 1550
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 680
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 955
rack travel mm : 10.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 10.90
Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000s. : 3.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.04.97
Test oil : ISO 4113
Combination No. : E 040 090 300
Injection pump
Pump designation : PES4A95D410RS2837
EP type number :
Governor
Governor design. : RQV300...1400AB1065
: -33L
Governor no. :
Cust. part No. : 026 074 08 02

Customer-spec. information
Customer : MB-NFZ
Motor : OM 364
Power KW : 65.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

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x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 8.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 72.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1450

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 72.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 112.0

RATED SPEED
rack travel mm : 7.85
Rated speed rpm : 1445
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1525
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1670

LOW IDLE

control lever
position degree : 66.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 6.50

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 8.85
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 8.90
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 53.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.50
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.98
Test oil : ISO 4113

Combination No. : 0 400 074 779

Injection pump
Pump designation : PES4M55C320RS187
EP type number : 0 410 054 936

Governor
Governor design. : RSF375/2300M56-10
Governor no. : 0 420 021 130

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-Abgl. MJ90
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

D03

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 33.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 1.5

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
 cm3/1000S. : 3.0
 Rated speed rpm : 375
 Rack travel in mm : 6.50
 Tolerance mm : \pm 0.10
 Del. quantity
 cm3/1000 strokes : 6.5
 Tolerance
 cm3/1000 strokes : \pm 0.5
 Spreed
 Tolerance
 cm3/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50
 Tolerance mm : \pm 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1100
 Del. quantity
 cm3/1000 strokes : 33.5
 Tolerance
 cm3/1000 strokes : \pm 0.5
 Check tolerance
 cm3/1000S. : \pm 1.5
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

RATED SPEED

control lever
 position degree : 50.0
 Rated speed rpm : 2500
 rack travel mm : 8.50
 Tolerance mm : \pm 0.20
 Rated speed rpm : 2950
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900
 CRT mm max. : 1.45

LOW IDLE

control lever
 position degree : 14.0
 tolerance degree : \pm 2.0

Setting point w/out bumper spring
 Rated speed rpm : 375
 rack travel mm : 6.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
 rack travel mm : 4.90
 Tolerance mm : \pm 0.10

rack travel mm : 2.50
 Rated speed rpm : 670
 Tolerance 1/min : \pm 50

Load pick-up

Rated speed rpm : 250
 rack travel mm : $>$ 11.00

Rated speed rpm : 900
 CRT mm max. : 1.45
 rack travel mm : 6.50
 Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 900
 rack travel mm : 12.35
 Tolerance mm : \pm 0.05

Rated speed rpm : 1400
 rack travel mm : 12.05
 Tolerance mm : \pm 0.10

Rated speed rpm : 2300
 rack travel mm : 11.40
 Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1400
Del. quantity
cm3/1000 strokes : 33.8
Tolerance
cm3/1000 strokes : \pm 0.8
Check tolerance
cm3/1000S. : \pm 1.8
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2300
Spreed
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 57.0
Tolerance
cm3/1000 strokes : \pm 4.0
Check tolerance
cm3/1000S. : \pm 5.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 7.8
Check tolerance
cm3/1000S. : \pm 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

control lever
position degree : > 49.00

control lever
position degree : < 45.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 14.0
tolerance degree : \pm 2.0

Rated speed rpm : 425

Rack travel in mm : 8.90
Tolerance mm : \pm 0.80
Del. quantity
cm3/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : +- 3.5
Check tolerance
cm³/1000S. : +- 4.5
Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : 450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.98
Test oil : ISO 4113
Combination No. : 0 400 074 873
Injection pump
Pump designation : PES4M55C320RS184
EP type number : 0 410 054 938
Governor
Governor design. : RSF375/2000M87
Governor no. : 0 420 021 290

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-2.3l
Power KW : 60.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 469 990 351
Inlet press. bar : 1.0
Test nozzle holder
assembly : 1 688 901 111
Opening pressure
bar : 148.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

D07

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 21.00
Tolerance mm : ± 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 16.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 12.70
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000s. : ± 1.5
Speed

Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 3.0

Rated speed rpm : 375

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 6.5

Tolerance
cm3/1000 strokes : \pm 0.5

Spreed
Tolerance
cm3/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity
cm3/1000 strokes : 40.5

Tolerance
cm3/1000 strokes : \pm 0.5

Check tolerance
cm3/1000S. : \pm 1.5

Spreed
Tolerance

cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2200
rack travel mm : 8.80
Tolerance mm : \pm 0.25

Rated speed rpm : 2500
rack travel mm : 0.50

D08

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 11.0
tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 4.70

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 3.40
Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250
rack travel mm : 11.70

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 4.70
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.70
Tolerance mm : \pm 0.05

Rated speed rpm : 1550
rack travel mm : 12.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1950
rack travel mm : 12.00
Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 940
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : \pm 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1550
Del. quantity
cm³/1000 strokes : 40.8
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1950
Spreed
Del. quantity
cm³/1000 strokes : 41.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1100

D09

Rated speed rpm : 2200
rack travel mm : 8.80
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60
Tolerance mm : \pm 1.50
Del. quantity
cm³/1000 strokes : 59.8
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 45.00

control lever
position degree : < 41.50

SETTING PNEUMATIC FAST IDLE (PLA)
(PLA) POSITION

control lever
position degree : 11.0
tolerance degree : \pm 2.0

Rated speed rpm : 425

Rack travel in mm : 7.00
Tolerance mm : \pm 0.80

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 3.5
Check tolerance
cm³/1000S. : \pm 4.5
Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.93
Test oil : ISO 4113

Combination No. : 0 402 646 916X

Injection pump
Pump designation : PE6P120A320LS7836
: -10
EP type number : 0 412 626 854

Governor
Governor design. : RQV300...1050PA797
: -17
Governor no. : 0 421 813 884

Cust. part No. : 0200740302

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 110
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 202.5
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

Rated speed rpm	: 300
Rack travel in mm	: 5.60
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 19.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spread	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1107
guide sleeve travel mm	: 8.48
Tolerance mm	: ± 0.20
Rated speed rpm	: 300
guide sleeve travel mm	: 1.26
Tolerance mm	: ± 0.15
Rated speed rpm	: 1800
guide sleeve travel mm	: 24.23
Tolerance mm	: ± 0.25
Rated speed rpm	: 587

guide sleeve travel mm	: 4.64
Tolerance mm	: ± 0.25
Rated speed rpm	: 637
guide sleeve travel mm	: 5.18
Tolerance mm	: ± 0.25
Rated speed rpm	: 830
guide sleeve travel mm	: 6.23
Tolerance mm	: ± 0.25
Rated speed rpm	: 1218
guide sleeve travel mm	: 10.00
Tolerance mm	: ± 0.25
Rated speed rpm	: 1330
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1125
Rack travel in mm	: 16.20
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure hPa	: 1400
Del. quantity cm ³ /1000 strokes	: 202.5
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 122.0
tolerance degree	: ± 4.0

RATED SPEED
 rack travel mm : 12.20
 Rated speed rpm : 1095
 Tolerance 1/min : \pm 5

 rack travel mm : 4.00
 Rated speed rpm : 1210
 Tolerance 1/min : \pm 15

 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 84.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
 CRT mm min. : $>$ 7.60

Testing:

Rated speed rpm : 300
 rack travel mm : 5.60
 Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
 rack travel mm : 13.20
 Tolerance mm : \pm 0.05

Rated speed rpm : 800
 rack travel mm : 13.20
 Tolerance mm : \pm 0.05

Rated speed rpm : 600
 rack travel mm : 13.20
 Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400

Pressure hPa : 1400
 rack travel mm : 13.20
 Tolerance mm : \pm 0.05

Rated speed rpm : 400
 Pressure hPa : -
 rack travel mm : 10.25
 Tolerance mm : \pm 0.15

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 10.25
 Tolerance mm : \pm 0.15

Rated speed rpm : 400

Pressure hPa : 200
 Tolerance mm : \pm 0.10

Pressure hPa : 350
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
 Rated speed rpm : $<$ 240

Check
 speed 1/min : $>$ 80
 Check
 speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1400
 Rated speed rpm : 800
 Del. quantity
 cm³/1000 strokes : 204.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

rack travel mm : 13.20
 Tolerance mm : \pm 0.05

Aneroid pressure
hPa : 350
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.09.93
Test oil : ISO 4113

Combination No. : 0 402 646 921X

Injection pump
Pump designation : PE6P120A320LS7837
: -10
EP type number : 0 412 626 855

Governor
Governor design. : RQ300/1050PA972-3
Governor no. : 0 421 801 565

Cust. part No. : 0200741202

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.90

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spread

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 245.0

Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.90
Rated speed rpm : 1098
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 15.05
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.05
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 150
rack travel mm : 9.70
Tolerance mm : \pm 0.10

Pressure hPa : 550
rack travel mm : 13.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.93
Test oil : ISO 4113

Combination No. : 0 402 646 959X

Injection pump
Pump designation : PE6P120A320LS7836
 : -10
EP type number : 0 412 626 854

Governor
Governor design. : RQ300/1050PA993-6
Governor no. : 0 421 801 616

Cust. part No. : 0210740402

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
 : 1

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 202.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Spread

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1400
Del. quantity
cm3/1000 strokes : 202.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.20
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 13.20
 Tolerance mm : \pm 0.05

 Rated speed rpm : 800
 rack travel mm : 13.20
 Tolerance mm : \pm 0.05

 Rated speed rpm : 600
 rack travel mm : 13.20
 Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
 Pressure hPa : 1400
 rack travel mm : 13.20
 Tolerance mm : \pm 0.05

 Rated speed rpm : 400
 Pressure hPa : -
 rack travel mm : 10.25
 Tolerance mm : \pm 0.15

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 10.25
 Tolerance mm : \pm 0.15

 Rated speed rpm : 400

 Pressure hPa : 200
 Tolerance mm : \pm 0.10

 Pressure hPa : 350
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 220

 Check
 speed 1/min : > 80
 Check
 speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1400

D20

Rated speed rpm : 800
 Del. quantity
 cm³/1000 strokes : 204.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Speed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

rack travel mm : 13.20
 Tolerance mm : \pm 0.05

Aneroid pressure
 hPa : 350
 Rated speed rpm : 400
 Del. quantity
 cm³/1000 strokes : 150.0
 Tolerance
 cm³/1000 strokes : \pm 1.5
 Check tolerance
 cm³/1000S. : \pm 4.5

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 130.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Speed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 210.0
 Tolerance
 cm³/1000 strokes : \pm 10.0
 Check tolerance
 cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.60

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 19.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Spreed

Tolerance

cm³/1000 strokes : 6.0

Check tolerance

cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.93
Test oil : ISO 4113
Combination No. : 0 402 646 960X
Injection pump
Pump designation : PE6P120A320LS7836
: -10
EP type number : 0 412 626 854
Governor
Governor design. : RQ300/950PA993-7
Governor no. : 0 421 801 617

Cust. part No. : 0210740702

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

D22

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 204.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Speed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1400
Del. quantity
cm3/1000 strokes : 204.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.20
Rated speed rpm : 998
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1080
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.40

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 950

rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.20
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1400
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.45
Tolerance mm : \pm 0.15

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.45
Tolerance mm : \pm 0.15

Rated speed rpm : 400

Pressure hPa : 200
Tolerance mm : \pm 0.10

Pressure hPa : 350
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400

D24

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 204.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 5.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

rack travel mm : 13.20
Tolerance mm : \pm 0.05

Aneroid pressure
hPa : 350
Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : \pm 1.5
Check tolerance
cm3/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 133.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 210.0
Tolerance
cm3/1000 strokes : \pm 10.0
Check tolerance
cm3/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.06.97
Test oil : ISO 4113

Combination No. : 0 402 648 783

Injection pump
Pump designation : PE8P120A320LS7906-1
EP type number : 0 412 628 925

Governor
Governor design. : RQ750PA1326
Governor no. : 0 421 801 815

Cust. part No. : 04222 3938 KY

Customer-spec. information

Customer : KHD
Motor : BF8M1015/C
Power KW : 318.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 200
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 5
 : - 4- 3- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 315.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.60
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 365.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 715
guide sleeve
travel mm : 4.23
Tolerance mm : \pm 0.15

Rated speed rpm : 610
guide sleeve
travel mm : 0.72
Tolerance mm : \pm 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 14.89
Tolerance mm : \pm 0.25

Rated speed rpm : 862

guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 930
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 365.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 11.60

Rated speed rpm : 780
Tolerance 1/min : \pm 4
rack travel mm : 4.50

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

Rated speed rpm : 751
rack travel mm : 11.60

Rated speed rpm : 781
Tolerance 1/min : \pm 4
rack travel mm : 4.50

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

Rated speed rpm : 752
rack travel mm : 11.60

Rated speed rpm : 782
Tolerance 1/min : \pm 4
rack travel mm : 4.50

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

Rated speed rpm : 753
rack travel mm : 11.60

Rated speed rpm : 783
Tolerance 1/min : \pm 4
rack travel mm : 4.50

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

Rated speed rpm : 754
rack travel mm : 11.60

Rated speed rpm : 784
Tolerance 1/min : \pm 4
rack travel mm : 4.50

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

Rated speed rpm : 755
rack travel mm : 11.60

Rated speed rpm : 785
Tolerance 1/min : \pm 4
rack travel mm : 4.50

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 900

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.60
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 560

Check
speed 1/min : > 80
Check
speed 1/min : < 580

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.12.93
Test oil : ISO 4113

Combination No. : 0 402 648 894A

Injection pump
Pump designation : PE8P120A320LS7835
: -10
EP type number : 0 412 628 853

Governor
Governor design. : RQV300...950PA797
: -18
Governor no. : 0 421 813 886

Cust. part No. : 0200740702

Customer-spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5

E01

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity
cm3/1000 strokes : 231.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1008
guide sleeve
travel mm : 8.52
Tolerance mm : + 0.20

Rated speed rpm : 300
guide sleeve
travel mm : 1.50
Tolerance mm : + 0.15

Rated speed rpm : 589
guide sleeve
travel mm : 4.97
Tolerance mm : + 0.25

Rated speed rpm : 639
guide sleeve
travel mm : 5.51
Tolerance mm : + 0.25

Rated speed rpm : 790
guide sleeve
travel mm : 6.48

Tolerance mm : + 0.25

Rated speed rpm : 1100
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1210
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 980

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 231.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 126.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 13.10
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70

Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 84.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : \pm 0.10

Rated speed rpm : 305

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 14.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1200
rack travel mm : 14.70
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.45
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 750
Pressure hPa : 250
rack travel mm : 11.05

E03

Tolerance mm : \pm 0.10

Pressure hPa : 550
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 217.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.70
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 215.0
Tolerance
cm3/1000 strokes : \pm 15.0
Check tolerance
cm3/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 894X

Injection pump
Pump designation : PE8P120A320LS7835
: -10

EP type number : 0 412 628 853

Governor
Governor design. : RQV300...950PA797
: -18

Governor no. : 0 421 813 886

Cust. part No. : 0200740702

Customer-spec. information

Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 980

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 231.0

E06

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 126.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.10

Rated speed rpm : 995

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1085

Tolerance 1/min : ± 15

rack travel mm : 0.70

Tolerance mm : ± 0.70

Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 84.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 300

rack travel mm : 6.20

Tolerance mm : ± 0.10

Rated speed rpm : 305

TORQUE CONTROL

Dimension a mm : 0.50

Rated speed rpm : 750

rack travel mm	:	14.70
Tolerance mm	:	+ 0.05
Rated speed rpm	:	950
rack travel mm	:	14.10
Tolerance mm	:	+ 0.10
Rated speed rpm	:	800
rack travel mm	:	14.70
Tolerance mm	:	+ 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	400
Pressure hPa	:	1200
rack travel mm	:	14.70
Tolerance mm	:	+ 0.05

Rated speed rpm	:	400
Pressure hPa	:	-
rack travel mm	:	10.45
Tolerance mm	:	+ 0.15

MEASUREMENT

Rated speed rpm	:	400
Pressure hPa	:	250
rack travel mm	:	11.05
Tolerance mm	:	+ 0.10

Pressure hPa	:	550
Tolerance mm	:	+ 0.05

Start interlock

Rated speed rpm	:	> 100
Rated speed rpm	:	< 240

Check speed 1/min	:	> 80
Check speed 1/min	:	< 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	1200
Rated speed rpm	:	950
Del. quantity	:	
cm3/1000 strokes	:	217.5

Tolerance		
cm3/1000 strokes	:	+ 2.0
Check tolerance	:	
cm3/1000S.	:	+ 5.0
Spreed		
Tolerance	:	
cm3/1000 strokes	:	8.0
Check tolerance	:	
cm3/1000S.	:	12.0

rack travel mm	:	14.70
Tolerance mm	:	+ 0.05

Aneroid pressure		
hPa	:	550
Rated speed rpm	:	400
Del. quantity	:	
cm3/1000 strokes	:	190.0
Tolerance	:	
cm3/1000 strokes	:	+ 1.5
Check tolerance	:	
cm3/1000S.	:	+ 4.5

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	500
Del. quantity	:	
cm3/1000 strokes	:	135.0
Tolerance	:	
cm3/1000 strokes	:	+ 1.0
Check tolerance	:	
cm3/1000S.	:	+ 4.0
Spreed		
Tolerance	:	
cm3/1000 strokes	:	8.0
Check tolerance	:	
cm3/1000S.	:	12.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity	:	
cm3/1000 strokes	:	215.0
Tolerance	:	
cm3/1000 strokes	:	+ 15.0
Check tolerance	:	
cm3/1000S.	:	+ 19.0

LOW IDLE

Rated speed rpm	:	300
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Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93

Test oil : ISO 4113

Combination No. : 0 402 648 895X

Injection pump

Pump designation : PE8P120A320LS7835

: -10

EP type number : 0 412 628 853

Governor

Governer design. : RQ300/1050PA972-1

Governer no. : 0 421 801 545

Cust. part No. : 0180742102

Customer-spec. information

Customer : MB-NFZ

Motor : OM402 LA

Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

E09

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity

cm³/1000 strokes : 231.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 231.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.00

Rated speed rpm : 1098

Tolerance 1/min : + 8

rack travel mm : 4.00

Rated speed rpm : 1185

Tolerance 1/min : + 15

rack travel mm : 0.70

Tolerance mm : + 0.70

Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300

rack travel mm : 6.20

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 400

Tolerance 1/min : + 20

TORQUE CONTROL

Dimension a mm : 0.50

Rated speed rpm : 1050

rack travel mm : 14.00

Tolerance mm : + 0.10

Rated speed rpm : 800

rack travel mm : 14.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1200
rack travel mm : 14.70
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.25
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 750

Pressure hPa : 250
rack travel mm : 11.25
Tolerance mm : \pm 0.10

Pressure hPa : 550
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 215.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.70
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : 550
Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 899

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0 412 628 855

Governor
Governor design. : RQ300/950PA971-5
Governor no. : 0 421 801 559

Cust. part No. : 0200743702

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 110
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20
Tolerance mm : ± 0.10

BASIC SETTING

Del. quantity
cm³/1000 strokes : 266.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 266.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 15.50
Rated speed rpm : 998
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.60

Testing:

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 16.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 900

2-stage LDA setting

Rated speed rpm : 700
Pressure hPa : 1100
rack travel mm : 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 550
rack travel mm : -2.25
Tolerance mm : \pm 0.05

Pressure hPa : 1300
rack travel mm : 0.55
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : -5.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 282.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 273.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.30
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.30

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 902

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0 412 628 855

Governor
Governor design. : RQ300/1050PA972-5
Governor no. : 0 421 801 564

Cust. part No. : 0200743902

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20
Tolerance mm : ± 0.10

BASIC SETTING

Del. quantity
cm3/1000 strokes : 266.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 900
Del. quantity
cm3/1000 strokes : 266.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 15.30
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 16.30
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 16.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 900

2-stage LDA setting

Rated speed rpm : 700
Pressure hPa : 1100
rack travel mm : 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 550
rack travel mm : -2.25
Tolerance mm : \pm 0.05

Pressure hPa : 1300
rack travel mm : 0.55
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : -5.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 272.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 800
rack travel mm : 16.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 273.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.30
Tolerance mm : \pm 0.20

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 907

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0 412 628 855

Governor
Governor design. : RQV300...950PA797
: -22
Governor no. : 0 421 813 909

Cust. part No. : 0200743802

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20
Tolerance mm : ± 0.20

BASIC SETTING

Del. quantity
cm³/1000 strokes : 266.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1050

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 266.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 15.50
Rated speed rpm : 995
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : ± 15

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 86.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 8.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 16.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 900

2-stage LDA setting

Rated speed rpm : 700
Pressure hPa : 1100
rack travel mm : 0.20

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 550
rack travel mm : -2.25
Tolerance mm : \pm 0.05

Pressure hPa : 1300
rack travel mm : 0.55
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : -5.00
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 282.5

E23

Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 273.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 914X

Injection pump
Pump designation : PE8P120A320LS7835
: -10
EP type number : 0 412 628 853

Governor
Governor design. : RQV300...1050PA797
: -30
Governor no. : 0 421 813 921

Cust. part No. : 0180742202

Customer-spec. information

Customer : MB-NFZ
Motor : OM402 A
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 110
Tolerance L/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

E25

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20

Tolerance mm : ± 0.10

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : ± 3.0

Check tolerance
cm3/1000S. : ± 6.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 13.90
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 231.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 4.0
Spreed

Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : ± 15

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 86.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : ± 0.10

Rated speed rpm : 400

TORQUE CONTROL

Dimension a mm : 0.60

Rated speed rpm : 1050
rack travel mm : 14.00
Tolerance mm : ± 0.10

Rated speed rpm : 800

rack travel mm : 14.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1200
rack travel mm : 14.70
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.25
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 750

Pressure hPa : 250
rack travel mm : 11.25
Tolerance mm : \pm 0.10

Pressure hPa : 550
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 215.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.70
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 17.03.94

Test oil : ISO 4113

Combination No. : 0 402 678 820

Injection pump

Pump designation : PE8P120A320LS7823-1

EP type number : 0 412 628 872

Governor

Governor design. : RSV350...1050POA535

: -9

Governor no. : 0 421 833 393

Cust. part No. : 0240742402

Customer-spec. information

Customer : MB-NFZ

Motor : OM442LA

Power KW : 362.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1 688 901 019

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

F01

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 13.75

Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 235.5

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 4.5

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 235.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
rack travel mm : 13.40

Rated speed rpm : 1139
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

Rated speed rpm : 1071
rack travel mm : 13.40

Rated speed rpm : 1140
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

Rated speed rpm : 1072
rack travel mm : 13.40

Rated speed rpm : 1141
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

Rated speed rpm : 1073
rack travel mm : 13.40

Rated speed rpm : 1142
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

Rated speed rpm : 1078
rack travel mm : 13.40

Rated speed rpm : 1147
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

Rated speed rpm : 1079
rack travel mm : 13.40

Rated speed rpm : 1148
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1030
rack travel mm : 14.50
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 15.40
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 15.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600
Pressure hPa : 900

MEASUREMENT

Pressure hPa : 350
rack travel mm : -2.40
Tolerance mm : \pm 0.05

Pressure hPa : 500
rack travel mm : -0.80
Tolerance mm : \pm 0.10

Pressure hPa : 1050
rack travel mm : 0.20
Tolerance mm : \pm 0.05

Pressure hPa : 1250
rack travel mm : 1.10
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 1030
Del. quantity
cm³/1000 strokes : 254.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
rack travel mm : 15.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 272.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.98

Test oil : ISO 4113

Combination No. : 0 402 678 835

Injection pump

Pump designation : PE8P120A320LS7844

EP type number : 0 412 628 860

Governor

Governer design. : RSV350...1050POA673

Governer no. : 0 421 833 590

Cust. part No. : 0270746802

Customer-spec. information

Customer : MB-NFZ

Motor : OM442LA

Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 200

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 15.30

Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 272.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

Rated speed rpm	: 350
Rack travel in mm	: 5.00
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 19.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spread	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1030
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F06

Aneroid pressure hPa	: 1200
Del. quantity cm ³ /1000 strokes	: 272.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 96.0
tolerance degree	: ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	: 1070
Tolerance 1/min	: ± 1
rack travel mm	: 14.30
Rated speed rpm	: 1150
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1250

Rated speed rpm	: 1072
Tolerance 1/min	: ± 1
rack travel mm	: 14.30

Rated speed rpm	: 1152
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1250

Rated speed rpm	: 1074
Tolerance 1/min	: ± 1
rack travel mm	: 14.30

Rated speed rpm	: 1154
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm	: 0.85
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Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1076
Tolerance 1/min : \pm 1
rack travel mm : 14.30

Rated speed rpm : 1156
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1078
Tolerance 1/min : \pm 1
rack travel mm : 14.30

Rated speed rpm : 1158
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1080
Tolerance 1/min : \pm 1
rack travel mm : 14.30

Rated speed rpm : 1160
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.00

F07

Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 385
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 15.30
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 8.40
Tolerance mm : \pm 0.15

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 180
rack travel mm : 0.40
Tolerance mm : \pm 0.05

Pressure hPa : 670
rack travel mm : 5.00
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 277.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 678 836

Injection pump
Pump designation : PE8P120A320LS7844
EP type number : 0 412 628 860

Governor
Governor design. : RSV550...1050POA672
Governor no. : 0 421 833 591

Cust. part No. : 0270746402

Customer-spec. information
Customer : MB-NFZ
Motor : OM442LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 225
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 15.60
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 270.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 4.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 88.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
Tolerance 1/min : \pm 1
rack travel mm : 14.60

Rated speed rpm : 1110
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1200

Rated speed rpm : 1071
Tolerance 1/min : \pm 1
rack travel mm : 14.60

Rated speed rpm : 1111
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1200

Rated speed rpm : 1072
Tolerance 1/min : \pm 1
rack travel mm : 14.60

Rated speed rpm : 1112
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1200

Rated speed rpm : 1073
Tolerance 1/min : \pm 1
rack travel mm : 14.60

Rated speed rpm : 1113
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1200

Rated speed rpm : 1074
Tolerance 1/min : \pm 1
rack travel mm : 14.60

Rated speed rpm : 1114
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1200

Rated speed rpm : 1175
Tolerance 1/min : \pm 1
rack travel mm : 14.60

Rated speed rpm : 1115
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 550
rack travel mm : 4.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 570
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 15.60
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 15.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 9.75
Tolerance mm : \pm 0.15

Rated speed rpm : 450
Pressure hPa : 1200
rack travel mm : 15.60
Tolerance mm : \pm 0.10

Rated speed rpm : 450
Pressure hPa : -
rack travel mm : 9.75
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 450

Pressure hPa : 600
rack travel mm : 12.20
Tolerance mm : \pm 0.15

Pressure hPa : 800
rack travel mm : 14.10
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 4.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.11.97
Test oil : ISO 4113

Combination No. : 0 402 678 839

Injection pump
Pump designation : PE8P120A320LS7912
EP type number : 0 412 628 927

Governor
Governor design. : RSV550...1050POA681
Governor no. : 0 421 833 600

Cust. part No. : 028 074 2802

Customer-spec. information

Customer : MB-NFZ
Motor : OM402LA, Euro
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 4.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030

Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 88.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1110
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1071
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1111
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1072
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1112
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1073
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1113
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1074
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1114
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1075
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1115
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 550
rack travel mm : 4.10

F15

Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 575
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 13.70
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 14.70
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 14.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 450
Pressure hPa : 1000
rack travel mm : 14.70
Tolerance mm : \pm 0.15

Rated speed rpm : 450
Pressure hPa : -
rack travel mm : 12.40
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 450

Pressure hPa : 750
rack travel mm : 14.00
Tolerance mm : \pm 0.15

Pressure hPa : 650
rack travel mm : 13.40
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 240.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 5.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

rack travel mm : 14.20
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 170.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 220.0
Tolerance
cm3/1000 strokes : \pm 15.0
Check tolerance
cm3/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 4.10
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 18.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.94
Test oil : ISO 4113

Combination No. : 0 402 744 800

Injection pump
Pump designation : PES4P120A320RS7312
EP type number : 0 412 724 800

Governor
Governor design. : RQV400...1200PA1115
: -1K
Governor no. : 0 421 815 406

Cust. part No. : 51.11103-7295

Customer-spec. information
Customer : MAN
Motor : D0824LFLO2
Power KW : 116.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 15.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 214.0

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spread	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000S.	: 12.0

Rated speed rpm	: 400
Rack travel in mm	: 5.00
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 30.0
Tolerance	
cm3/1000 strokes	: + 3.0
Check tolerance	
cm3/1000S.	: + 6.0
Spread	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1256
guide sleeve	
travel mm	: 10.49
Tolerance mm	: + 0.25
Rated speed rpm	: 400
guide sleeve	
travel mm	: 3.06
Tolerance mm	: + 0.25
Rated speed rpm	: 869
guide sleeve	
travel mm	: 7.12
Tolerance mm	: + 0.25
Rated speed rpm	: 380
guide sleeve	
travel mm	: 2.52
Tolerance mm	: + 0.25

Rated speed rpm	: 430
guide sleeve	
travel mm	: 3.23
Tolerance mm	: + 0.25
Rated speed rpm	: 530
guide sleeve	
travel mm	: 4.25
Tolerance mm	: + 0.25
Rated speed rpm	: 1500
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1370
Rack travel in mm	: 9.00
Tolerance mm	: + 1.30

CONTROL LEVER

control lever	
position degree	: 121.0
tolerance degree	: + 4.0

RATED SPEED	
rack travel mm	: 14.00
Rated speed rpm	: 1250
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1385
Tolerance 1/min	: + 15

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1520

LOW IDLE

control lever	
position degree	: 77.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 325
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CRT mm min. : > 7.50

Testing:

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 15.00
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 14.80
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 13.70
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 7.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 15.00
Tolerance mm : \pm 0.05

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 9.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 600
rack travel mm : 13.45
Tolerance mm : \pm 0.15

Pressure hPa : 120
rack travel mm : 9.65
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : < 280

Rated speed rpm : > 320

Check
speed 1/min : < 260
Check
speed 1/min : > 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
rack travel mm : 13.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 204.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 60.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.70
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 98.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.03.98
Test oil : ISO 4113

Combination No. : 0 402 646 672

Injection pump
Pump designation : PE6P120A320RS7421
EP type number : 0 412 626 956

Governor
Governor design. : RQV275...1150PA1298K
Governor no. : 0 421 815 525

Cust. part No. : 1316185/1

Customer spec. information
Customer : DAF
Motor : PF 183 M
Power KW : 183.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200
guide sleeve
travel mm : 10.06
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 811
guide sleeve
travel mm : 6.79
Tolerance mm : \pm 0.25

Rated speed rpm : 450

guide sleeve
travel mm : 3.85
Tolerance mm : \pm 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1343

Rack travel in mm : 9.80
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.05
Rated speed rpm : 1190
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1285
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.70

Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 7.00

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1130
rack travel mm : 11.05
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 11.15
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 11.15
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 10.45
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 9.55
Tolerance mm : \pm 0.10

Rated speed rpm : 1150
rack travel mm : 11.05
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 11.35
Tolerance mm : \pm 0.10

Rated speed rpm : 875
Pressure hPa : -
rack travel mm : 8.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 400
rack travel mm : 10.50
Tolerance mm : \pm 0.05

Pressure hPa : 200
rack travel mm : 9.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 11.15
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 138.0

Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 646 887AB

Injection pump
Pump designation : PE6P120A720RS7188
: -10
EP type number : 0 412 626 924

Governor
Governor design. : RQV200...950PA725-7
Governor no. : 0 421 813 803

Cust. part No. : 1333122-1

Customer-spec. information
Customer : SCANIA
Motor : DSC 11 23

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 190
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1045
guide sleeve
travel mm : 8.50
Tolerance mm : \pm 0.10

Rated speed rpm : 225
guide sleeve
travel mm : 1.40
Tolerance mm : \pm 0.20

Rated speed rpm : 650
guide sleeve
travel mm : 4.80

Tolerance mm : \pm 0.30

Rated speed rpm : 350
guide sleeve
travel mm : 2.70
Tolerance mm : \pm 0.30

Rated speed rpm : 1125
guide sleeve
travel mm : 9.50
Tolerance mm : \pm 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 9.50
Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

control lever
position degree : 114.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 995

Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 10.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150
CRT mm min. : $>$ 6.00

Testing:

Rated speed rpm : 250
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 13.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.60
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 270
rack travel mm : 10.90
Tolerance mm : \pm 0.15

Pressure hPa : 440
rack travel mm : 11.90
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 237.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 128.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.60
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 646 937AB

Injection pump
Pump designation : PE6P120A720RS7188
: -100
EP type number : 0 412 626 925

Governor
Governor design. : RQV200...950PA725-7
Governor no. : 0 421 813 803

Cust. part No. : 1333121-1

Customer-spec. information
Customer : SCANIA
Motor : DSC11 21

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes	: 220.0
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

Rated speed rpm	: 250
Rack travel in mm	: 4.70
Tolerance mm	: ± 0.10
Del. quantity cm3/1000 strokes	: 16.0
Tolerance cm3/1000 strokes	: ± 3.0
Check tolerance cm3/1000S.	: ± 6.0
Spreed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1045
guide sleeve travel mm	: 8.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 225
guide sleeve travel mm	: 1.40
Tolerance mm	: ± 0.20
Rated speed rpm	: 650
guide sleeve travel mm	: 4.80
Tolerance mm	: ± 0.30
Rated speed rpm	: 350

guide sleeve travel mm	: 2.70
Tolerance mm	: ± 0.30
Rated speed rpm	: 1125
guide sleeve travel mm	: 9.50
Tolerance mm	: ± 0.20

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1150
Rack travel in mm	: 9.50
Tolerance mm	: ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure hPa	: -
Del. quantity cm3/1000 strokes	: 220.0
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 60.0
tolerance degree	: ± 4.0
control lever position degree	: 112.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 11.70
Rated speed rpm	: 995
Tolerance 1/min	: ± 5
Check speed 1/min	: ± 10
rack travel mm	: 4.00
Rated speed rpm	: 1120
Tolerance 1/min	: ± 15

Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 62.0
tolerance degree : + 4.0

control lever
position degree : 10.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 6.07

Testing:

Rated speed rpm : 250
rack travel mm : 4.70
Tolerance mm : + 0.10

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 12.75
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.75
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.60

G03

Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 270
rack travel mm : 11.05
Tolerance mm : + 0.15

Pressure hPa : 440
rack travel mm : 12.00
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 950
Del. quantity
cm3/1000 strokes : 209.0
Tolerance
cm3/1000 strokes : + 4.0
Check tolerance
cm3/1000S. : + 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 120.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.60
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 134.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98

Test oil : ISO 4113

Combination No. : 0 402 946 020

Injection pump

Pump designation : PES6P120A320RS8038

EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

: -2

Governer no. : 0 421 814 168

Cust. part No. : 1369545

Customer-spec. information

Customer : SCANIA

Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 105

Tolerance l/h : ± 15.0

Test nozzle holde assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.00

Tolerance mm : ± 0.05

Check tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50

Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 45.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
guide sleeve
travel mm : 7.89
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : \pm 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : \pm 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09
Tolerance mm : \pm 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 277.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 9.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.30
Rated speed rpm : 1045
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 89.0
tolerance degree : \pm 4.0

control lever
position degree : 24.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 9.80

Testing:

Rated speed rpm : 250
rack travel mm : 7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330
rack travel mm : 11.20

G07

Tolerance mm : \pm 0.15

Pressure hPa : 600
rack travel mm : 11.90
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $<$ 190
Rated speed rpm : $>$ 150

Check
speed 1/min : $<$ 210
Check
speed 1/min : $>$ 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 278.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.10.94
Test oil : ISO 4113

Combination No. : 0 401 646 002

Injection pump
Pump designation : PES6R120/720LS1505
EP type number : 0 411 626 004

Governor
Governor design. : RQV300...1100R3K
Governor no. : 0 421 415 004

Cust. part No. : 51.11103-7234

Customer-spec. information
Customer : MAN
Motor : D2866LE401
Power KW : 440.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

G09

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BASIC SETTING

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.98
Test oil : ISO 4113
Combination No. : F 000 409 208
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C969R
Governor no. : F 000 420 702

Cust. part No. : 3353232

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 10.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.30

Rated speed rpm : 1150

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : \pm 15

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450

rack travel mm : 4.60

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 10.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 12.85
Tolerance mm : \pm 0.25

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm3/1000 strokes : 135.0
Tolerance
cm3/1000 strokes : \pm 8.0
Check tolerance
cm3/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 12.5
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.98

Test oil : ISO 4113

Combination No. : F 000 409 209

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governor design. : RSV400...1100A2C970R

Governor no. : F 000 420 703

Cust. part No. : 3352892

Customer-spec. information

Customer : CUMMINS

Motor : 6 CT

Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 0 681 343 009

Opening pressure

bar : 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.23

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 10.50

Tolerance mm : ± 1.50

Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.65
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 92.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 92.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 86.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.60
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.45
Tolerance mm : \pm 0.05

Rated speed rpm : 850
rack travel mm : 11.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 700
rack travel mm : 11.45
Tolerance mm : \pm 0.05
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.98

Test oil : ISO 4113

Combination No. : F 000 409 210

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C971R

Governer no. : F 000 420 704

Cust. part No. : 3354419

Customer-spec. information

Customer : CUMMINS

Motor : 6 CT

Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 0 681 343 009

Opening pressure
bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.23

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel

: 10.50

Tolerance mm : ± 1.50

Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 107.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 400

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 107.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 89.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.30
Rated speed rpm : 1145

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1190

Tolerance 1/min : \pm 15

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.10

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 595
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.90
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 12.20
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 400

G18

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.98
Test oil : ISO 4113

Combination No. : F 000 409 211

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025

Governor
Governor design. : RSV400...1100A2C972R
Governor no. : F 000 420 705

Cust. part No. : 3352893

Customer spec. information
Customer : CUMMINS
Motor : 6 CT
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 88.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 400

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 2.50

G20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 88.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 89.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.20
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 595
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 11.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113
Combination No. : F 000 409 203
Injection pump
Pump designation : PES6A95D410RS2923
EP type number : F 000 400 401
Governor
Governor design. : RQV300...1300AB1326L
Governor no. : F 000 420 302

Cust. part No. : A 028 074 36 02

Customer-spec. information
Customer : MBB
Motor : OM 366LA/EuroI
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 19.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 6.60
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 13.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1354
guide sleeve
travel mm : 8.35
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.02
Tolerance mm : \pm 0.20

Rated speed rpm : 974
guide sleeve
travel mm : 6.06
Tolerance mm : \pm 0.25

Rated speed rpm : 590
guide sleeve
travel mm : 3.50
Tolerance mm : \pm 0.25

Rated speed rpm : 1710
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1366

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900

Del. quantity
cm3/1000 strokes : 97.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 113.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.50
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1520
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1640

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 21.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : $>$ 9.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.60
Tolerance mm : \pm 0.10

Rated speed rpm : 355

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 510
rack travel mm : 2.90
Tolerance mm : \pm 0.10

Pressure hPa : 270
rack travel mm : 1.30
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100

Rated speed rpm : $<$ 210

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113
Combination No. : F 000 409 212
Injection pump
Pump designation : PES6A95D410RS2923
EP type number : F 000 400 401
Governor
Governor design. : RQV300...1300AB1326L
Governor no. : F 000 420 302

Cust. part No. : A 028 074 51 02

Customer-spec. information
Customer : MBB
Motor : OM 366LA/EuroI
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 19.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 6.60

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 13.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1354
guide sleeve
travel mm : 8.35
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.02
Tolerance mm : \pm 0.20

Rated speed rpm : 974
guide sleeve
travel mm : 6.06
Tolerance mm : \pm 0.25

Rated speed rpm : 590
guide sleeve
travel mm : 3.50
Tolerance mm : \pm 0.25

Rated speed rpm : 1710
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1366

Rack travel in mm : 16.50
Tolerance mm : \pm 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900

Del. quantity
cm3/1000 strokes : 97.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.50
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1520
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1640

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 9.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.60
Tolerance mm : \pm 0.10

Rated speed rpm : 355

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 270
rack travel mm : 1.20
Tolerance mm : \pm 0.10

Pressure hPa : 510
rack travel mm : 2.80
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 210

Check
speed 1/min : > 80
Check
speed 1/min : < 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113
Combination No. : 0 400 864 103
Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995
Governor
Governor design. : RSV325...1250A5C871L
Governor no. : 0 420 232 626

Cust. part No. : 0423 1876 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF4L 913
Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 87.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000s. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.50

Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1355

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1565

rack travel mm : 4.00

Rated speed rpm : 1415

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 9.60
Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 605

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 13.50

Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 13.70
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

H03

Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 9.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 400 864 106

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C879L
Governor no. : 0 420 232 634

Cust. part No. : 0423 2071 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF4L 913
Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.50

Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1355

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1565

rack travel mm : 4.00

Rated speed rpm : 1415

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 9.10

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 9.60

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 605

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 13.50

Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 14.20
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 14.20
Tolerance mm : ± 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.30
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 300
rack travel mm : 13.70
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

H06

Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 9.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.12.97
Test oil : ISO 4113

Combination No. : 0 400 866 208BE

Injection pump
Pump designation :
EP type number :

Governor
Governor design. :
Governor no. :

Cust. part No. : 392 1164

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : 10.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 125.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.5

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

Rated speed rpm : 415

Rack travel in mm : 5.60

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 18.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 125.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.5

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.40
Rated speed rpm : 1115

Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1180

Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1190

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 415
rack travel mm : 5.10

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 415
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.45
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 415
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113

Combination No. : 0 400 876 434

Injection pump
Pump designation : PES6A95D410RS2864
EP type number : 0 410 896 888

Governor
Governor design. : RSV400...1050A8C2263
: -11L
Governor no. : 0 420 232 635

Cust. part No. : 87 801 607

Customer-spec. information
Customer : NH
Motor : P 396
Power KW : 176.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

H10

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.75
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 137.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.75
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 137.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1095
rack travel mm : 10.60

Rated speed rpm : 1165
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1096
rack travel mm : 10.60

Rated speed rpm : 1166
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1097
rack travel mm : 10.60

Rated speed rpm : 1167
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1098
rack travel mm : 10.60

Rated speed rpm : 1168
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1099
rack travel mm : 10.60

Rated speed rpm : 1169
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1100
rack travel mm : 10.60

Rated speed rpm : 1170
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 5.75
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 585
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 13.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 11.20
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 12.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.85
Tolerance mm : \pm 0.05

Pressure hPa : 600
rack travel mm : 11.90
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 98.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.75
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.98
Test oil : ISO 4113

Combination No. : F 002 A02 011

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1100A0C888R
Governor no. : F 002 A20 212

Cust. part No. : 3930164

Customer-spec. information
Customer : CUMMINS
Motor : 6BTA
Power KW : 124.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.65

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 116.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.95
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.6

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 116.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 1115
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 19.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 4.95
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.95
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 550
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.65
Tolerance mm : \pm 0.05

Rated speed rpm : 750

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550
rack travel mm : 12.50
Tolerance mm : \pm 0.20

Pressure hPa : 400
rack travel mm : 11.85
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 120.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 83.9
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.95
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.6
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 050

Injection pump
Pump designation : PES6A95D320/3RS2916
EP type number : F 002 A10 010

Governor
Governor design. : RSV425...1050A0C930R
Governor no. : F 002 A20 236

Cust. part No. : 328 3917

Customer-spec. information
Customer : CUMMINS
Motor : 6BT
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

H17

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes	: 98.2
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 3.0
Spreed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 6.0

Rated speed rpm	: 425
Rack travel in mm	: 5.05
Tolerance mm	: ± 0.10
Del. quantity cm3/1000 strokes	: 18.5
Tolerance cm3/1000 strokes	: ± 2.0
Check tolerance cm3/1000S.	: ± 4.5
Spreed	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: FREE
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension	
click setting x	: 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
-----------------	--------

Aneroid pressure hPa	: 900
Del. quantity cm3/1000 strokes	: 98.2
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 3.0
Spreed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 95.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 10.25
Rated speed rpm	: 1090
Tolerance 1/min	: ± 5

rack travel mm	: 4.50
Rated speed rpm	: 1145
Tolerance 1/min	: ± 5

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1275

rack travel mm	: 4.50
Rated speed rpm	: 1145
Tolerance 1/min	: ± 15

LOW IDLE

control lever position degree	: 74.0
tolerance degree	: ± 4.0

Control lever difference Grad	: 21.0
tolerance degree	: ± 6.0

Setting point w/out bumper spring

Rated speed rpm	: 425
rack travel mm	: 4.05
Tolerance mm	: ± 0.10

Rated speed rpm	: 100
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CRT mm min. : > 19.00

Testing:

Rated speed rpm : 425
rack travel mm : 5.05
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 650
rack travel mm : 11.25
Tolerance mm : \pm 0.20

Pressure hPa : 400
rack travel mm : 10.60
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 106.2

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 79.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 425
Rack travel in mm : 5.05
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 621

Injection pump
Pump designation : PES6P120A720RS7424
EP type number : 0 412 726 964

Governor
Governor design. : RQV325...875PA944
: -24K
Governor no. : 0 421 815 535

Cust. part No. : 313GC5228-P14

Customer-spec. information

Customer : MACK
Motor : EM7-300
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 14.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 312.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 600

Rack travel in mm : 4.80

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 939
guide sleeve
travel mm : 7.51
Tolerance mm : ± 0.15

Rated speed rpm : 340
guide sleeve
travel mm : 1.92
Tolerance mm : ± 0.20

Rated speed rpm : 726
guide sleeve
travel mm : 5.63
Tolerance mm : ± 0.25

Rated speed rpm : 510

guide sleeve
travel mm : 3.81
Tolerance mm : ± 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 312.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 13.00
Rated speed rpm : 930
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1210

LOW IDLE

control lever
position degree : 65.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : $>$ 6.06

Testing:

Rated speed rpm : 340

rack travel mm : 4.80

Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 875

rack travel mm : 14.10

Tolerance mm : \pm 0.05

Rated speed rpm : 510

rack travel mm : 14.85

Tolerance mm : \pm 0.10

Rated speed rpm : 625

rack travel mm : 14.70

Tolerance mm : \pm 0.20

Rated speed rpm : 400

rack travel mm : 14.25

Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510

Pressure hPa : 1200

Rated speed rpm : 510

Pressure hPa : -

rack travel mm : 9.20

Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 510

Pressure hPa : 740

rack travel mm : 13.20

Tolerance mm : \pm 0.20

Pressure hPa : 400

rack travel mm : 10.60

Tolerance mm : \pm 0.05

H22

Start interlock

Rated speed rpm : $>$ 100

Rated speed rpm : $<$ 250

Check
speed 1/min : $>$ 80

Check
speed 1/min : $<$ 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200

Rated speed rpm : 510

Del. quantity
cm³/1000 strokes : 402.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.70

Tolerance mm : \pm 0.20

Aneroid pressure

hPa : -

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 187.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 21.00

Tolerance mm : \pm 0.50

Del. quantity
cm³/1000 strokes : 190.0

Tolerance
cm³/1000 strokes : \pm 20.0

Check tolerance
cm³/1000S. : \pm 30.0

LOW IDLE

Rated speed rpm : 600

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 622

Injection pump
Pump designation : PES6P120A720RS7424
EP type number : 0 412 726 964

Governor
Governor design. : RQV325...900PA944
: -25K
Governor no. : 0 421 815 536

Cust. part No. : 313GC5228-P16

Customer-spec. information
Customer : MACK
Motor : E7-350
Power KW : 261.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 319.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 600

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 319.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.10

Rated speed rpm : 945

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1115

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 6.10

Testing:

Rated speed rpm : 340

rack travel mm : 4.80

Tolerance mm : ± 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 14.15

Tolerance mm : ± 0.05

Rated speed rpm : 625

rack travel mm : 13.60

Tolerance mm : ± 0.10

Rated speed rpm : 500

rack travel mm : 12.80

Tolerance mm : ± 0.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900

Pressure hPa : 810
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 420
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm3/1000 strokes : 339.5
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

rack travel mm : 12.80

H26

Tolerance mm : \pm 0.40

Aneroid pressure

hPa : -
Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 171.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm3/1000 strokes : 190.0
Tolerance
cm3/1000 strokes : \pm 20.0
Check tolerance
cm3/1000S. : \pm 30.0

LOW IDLE

Rated speed rpm : 600

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 32.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 5.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.03.98
Test oil : ISO 4113

Combination No. : 0 403 466 181

Injection pump
Pump designation : PES6MW100/120RS1238
EP type number : 0 413 406 237

Governor
Governor design. : RSV500...1000MW2A411
Governor no. : 0 420 085 302

Cust. part No. : 3930526

Customer-spec. information
Customer : CDC
Motor : 6 CT
Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 15.00
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 130.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 500

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 21.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

H28

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 130.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.25
Rated speed rpm : 1055

Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 15

rack travel mm : 4.00
Rated speed rpm : 1160

Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 1.00
Tolerance mm : \pm 0.70

Rated speed rpm : 1250

rack travel mm : 4.00
Rated speed rpm : 1160

Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 17.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.85
Tolerance mm : \pm 0.10

Rated speed rpm : 850
rack travel mm : 12.75
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.95
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 880
rack travel mm : 12.40

J01

Tolerance mm : \pm 0.20
Pressure hPa : 600
rack travel mm : 11.40
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 850
rack travel mm : 12.75
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.98
Test oil : ISO 4113

Combination No. : 0 402 076 790

Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV400...1100P2A599
: -5
Governor no. : 0 421 833 525

Cust. part No. : RE66242

Customer-spec. information
Customer : DEERE
Motor : 6081TF001
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 134.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 134.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.50

Rated speed rpm : 1160

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1215

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.20

Tolerance mm : \pm 0.10

Rated speed rpm : 100
 CRT mm min. : > 19.00
 Testing:
 Rated speed rpm : 400
 rack travel mm : 5.70
 Tolerance mm : \pm 0.10

TORQUE CONTROL
 Rated speed rpm : 1100
 rack travel mm : 11.55
 Tolerance mm : \pm 0.05

 Rated speed rpm : 700
 rack travel mm : 11.90
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 900

 Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 9.20
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

 Pressure hPa : 550
 rack travel mm : 11.00
 Tolerance mm : \pm 0.20

 Pressure hPa : 210
 rack travel mm : 9.80
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100

 Check
 speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 900
 Rated speed rpm : 700
 Del. quantity
 cm3/1000 strokes : 150.5
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 78.0
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 21.00
 Tolerance mm : \pm 0.50
 Del. quantity
 cm3/1000 strokes : 105.0
 Tolerance
 cm3/1000 strokes : \pm 20.0
 Check tolerance
 cm3/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400

 Rack travel in mm : 5.70
 Tolerance mm : \pm 0.10
 Del. quantity
 cm3/1000 strokes : 26.0
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.5
 Spread
 Tolerance
 cm3/1000 strokes : 6.0
 Check tolerance
 cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.98
Test oil : ISO 4113

Combination No. : 0 402 076 791

Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV400...1100P2A599
: -6
Governor no. : 0 421 833 526

Cust. part No. : RE66241

Customer-spec. information
Customer : DEERE
Motor : 6081TF001
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 134.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 134.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 6.0

RATED SPEED

rack travel mm : 10.50

Rated speed rpm : 1160
Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1215
Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55
Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1225
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.20
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 150.5

Tolerance

cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 026CB

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1250A0C904R
Governor no. : F 002 A20 220

Cust. part No. : 3935030

Customer-spec. information

Customer : CDC
Motor : 4BT3.9
Power KW : 54.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 85.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 450

Rack travel in mm : 5.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 85.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.30
Rated speed rpm : 1365

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1430

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1490

rack travel mm : 4.00
Rated speed rpm : 1440

Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

LOW IDLE

control lever
position degree : 85.0
tolerance degree : ± 4.0

Control Lever difference

Grad : 28.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.40
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.98
Test oil : ISO 4113

Combination No. : 0 401 846 529

Injection pump
Pump designation : PE6P120A320RS3186
EP type number : 0 411 826 756

Governor
Governor design. : RQV250...1025PA921
: -4
Governor no. : 0 421 813 787

Cust. part No. : 422719-P05 V. 06/92

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD102F (Q)
Power Kw : 220.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 2.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1080

guide sleeve
travel mm : 8.40
Tolerance mm : \pm 0.10

Rated speed rpm : 250
guide sleeve
travel mm : 1.25

Tolerance mm : \pm 0.05

Rated speed rpm : 900
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 430
guide sleeve
travel mm : 3.65
Tolerance mm : \pm 0.15

Rated speed rpm : 700
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1080

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 117.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.45

Rated speed rpm : 1060
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + 4.0

control lever
position degree : 8.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 6.60

Testing:

Rated speed rpm : 250
rack travel mm : 5.10
Tolerance mm : + 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.45
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.45
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.75

Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 2.35
Tolerance mm : + 0.20

Pressure hPa : 100
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000s. : + 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.98

Test oil : ISO 4113

Combination No. : 0 401 856 701

Injection pump

Pump designation : PE6P110A721RS3101

EP type number : 0 411 816 725

Governor

Governer design. : RQV250/1200PA413

Governer no. : 0 421 813 333

Cust. part No. :

Customer-spec. information

Customer : STEYR

Motor : WD615.67

Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde assembly

: 0 681 343 009

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.05

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 163.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 250

Rack travel in mm : 5.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.5

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1256
guide sleeve
travel mm : 7.59
Tolerance mm : \pm 0.25

Rated speed rpm : 250
guide sleeve
travel mm : 0.64
Tolerance mm : \pm 0.25

Rated speed rpm : 1060
guide sleeve
travel mm : 6.07
Tolerance mm : \pm 0.25

Rated speed rpm : 564
guide sleeve
travel mm : 3.52
Tolerance mm : \pm 0.25

Rated speed rpm : 614

guide sleeve
travel mm : 3.90
Tolerance mm : \pm 0.25

Rated speed rpm : 740
guide sleeve
travel mm : 4.41
Tolerance mm : \pm 0.25

Rated speed rpm : 1441
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1560
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1390

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 45.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.00
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1350
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 13.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : > 7.50

Testing:

Rated speed rpm : 250
rack travel mm : 5.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.05
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.45
Tolerance mm : \pm 0.10

Rated speed rpm : 880
rack travel mm : 12.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.45
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330
rack travel mm : 10.80
Tolerance mm : \pm 0.20

Pressure hPa : 420
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 170

Check
speed 1/min : > 80
Check
speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 700
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

rack travel mm : 12.25
Tolerance mm : \pm 0.05

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98
Test oil : ISO 4113

Combination No. : 0 401 886 702

Injection pump
Pump designation : PE6P110A721RS3341
EP type number : 0 411 816 796

Governor
Governor design. : RSV400...1200P1A527
: -1
Governor no. : 0 421 833 455

Cust. part No. : 615.60.08.0039

Customer-spec. information
Customer : SNF
Motor : WD615.88
Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 012

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 188.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 3.10

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 14.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 5.5

Spreed
Tolerance

cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 188.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance

cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.80

Rated speed rpm : 1245

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1300

Tolerance 1/min : \pm 15

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.60
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 9.50

Testing:

Rated speed rpm : 400
rack travel mm : 3.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 465
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 13.80
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.80
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.10
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 360
rack travel mm : 10.90
Tolerance mm : + 0.20

Pressure hPa : 600
rack travel mm : 12.80
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 198.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0

Aneroid pressure
hPa : -

J22

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 123.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.30
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 205.0
Tolerance
cm3/1000 strokes : + 15.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 3.10
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 5.5
Speed
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 20.03.98
Test oil : ISO 4113

Combination No. : 0 401 946 701

Injection pump
Pump designation : PE6P120A32ORS3240
EP type number : 0 411 826 786

Governor
Governor design. : RQV250...1025PA371
Governor no. : 0 421 813 303

Cust. part No. : 8193548

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD122FLs
Power KW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 457 413 046

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Del. quantity	
cm3/1000 strokes	: 252.0
Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000S.	: +- 4.0
Speed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

Rated speed rpm	: 250
Rack travel in mm	: 6.60
Tolerance mm	: +- 0.10
Del. quantity	
cm3/1000 strokes	: 20.0
Tolerance	
cm3/1000 strokes	: +- 2.5
Check tolerance	
cm3/1000S.	: +- 5.0
Speed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1100
Rack travel in mm	: 16.50
Tolerance mm	: +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm3/1000 strokes	: 252.0

Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000S.	: +- 4.0
Speed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 65.0
tolerance degree	: +- 4.0
control lever	
position degree	: 120.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 12.65
Rated speed rpm	: 1070
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
Tolerance 1/min	: +- 15
rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 1250

LOW IDLE

control lever	
position degree	: 64.0
tolerance degree	: +- 4.0
control lever	
position degree	: 9.0
tolerance degree	: +- 4.0

Setting point w/out bumper spring

Rated speed rpm	: 100
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Testing:

Rated speed rpm	: 250
rack travel mm	: 6.60
Tolerance mm	: +- 0.10
Rated speed rpm	: 315

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 780
rack travel mm : 3.30
Tolerance mm : \pm 0.10

Pressure hPa : 90
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 6.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 2.5

Check tolerance
cm³/1000S. : \pm 5.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113

Combination No. : 0 402 066 704

Injection pump
Pump designation : PES6P120A120RS3358
EP type number : 0 412 026 784

Governor
Governor design. : RSV475...1250P2A613
Governor no. : 0 421 833 501

Cust. part No. : 3927359

Customer-spec. information
Customer : CDC
Motor : 6BTA-590 ELITE
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 167.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 167.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.45

Rated speed rpm : 1305

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1405

Tolerance 1/min : \pm 15

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1530

rack travel mm : 4.00

Rated speed rpm : 1415

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 84.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 5.00

Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.50
Tolerance mm : \pm 0.20

Pressure hPa : 575
rack travel mm : 10.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 181.5

Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure hPa

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 106.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.97
Test oil : ISO 4113
Combination No. : 0 402 646 665
Injection pump
Pump designation : PE6P130A720RS7354
EP type number : 0 412 636 835
Governor
Governor design. : RQV300...950PA1002
: -3K
Governor no. : 0 421 815 491
Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8210.42K.3000

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 076
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

K02

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 12.00
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Check
tolerance °NW : ± 0.40
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950
Rack travel in mm : 11.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 242.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.30
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 32.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1025
guide sleeve
travel mm : 9.00
Tolerance mm : + 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.64
Tolerance mm : + 0.20

Rated speed rpm : 764
guide sleeve
travel mm : 6.22
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.78
Tolerance mm : + 0.25

Rated speed rpm : 1330

guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1190

Rack travel in mm : 11.00
Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 242.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.90
Rated speed rpm : 1010

Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1110
Tolerance 1/min : + 15

Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 6.20

Testing:

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 355

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 11.30
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 10.80
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 1000
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 950
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.40

MEASUREMENT

Rated speed rpm : 950
Pressure hPa : 290
rack travel mm : 9.35
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 11.10
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 180
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 160
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 550
rack travel mm : 11.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 15.0

Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.30

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 667

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1278K
Governor no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec. information
Customer : DAF
Motor : XF 315 M
Power KW : 315.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.40
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 318.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

Rated speed rpm	: 275
Rack travel in mm	: 3.80
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 17.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1077
guide sleeve travel mm	: 10.24
Tolerance mm	: ± 0.15
Rated speed rpm	: 275
guide sleeve travel mm	: 2.04
Tolerance mm	: ± 0.20
Rated speed rpm	: 704
guide sleeve travel mm	: 6.53
Tolerance mm	: ± 0.25
Rated speed rpm	: 400

guide sleeve travel mm	: 3.92
Tolerance mm	: ± 0.25

Rated speed rpm	: 1310
guide sleeve travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1158

Rack travel in mm	: 12.00
Tolerance mm	: ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 980
Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 318.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 119.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 12.40
Rated speed rpm	: 1040
Tolerance 1/min	: ± 5
Check speed 1/min	: ± 10

rack travel mm	: 4.00
Rated speed rpm	: 1145
Tolerance 1/min	: ± 15
Check speed 1/min	: ± 20

rack travel mm	: 0.50
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Tolerance mm : \pm 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : $>$ 6.60

Testing:

Rated speed rpm : 275
rack travel mm : 3.80
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.35
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 12.55
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.05
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 980
rack travel mm : 13.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 980
Pressure hPa : -
rack travel mm : 8.55
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 980
Pressure hPa : 520
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 342.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.05
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 195.0

Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 668

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1278
: -1K
Governor no. : 0 421 815 510

Cust. part No. : 1310220/1

Customer spec. information
Customer : DAF
Motor : XF 280 M
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 145
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

K10

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.60

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 303.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1062
guide sleeve
travel mm : 10.04
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.20

Rated speed rpm : 697
guide sleeve
travel mm : 6.48
Tolerance mm : \pm 0.25

Rated speed rpm : 400

guide sleeve
travel mm : 3.92
Tolerance mm : \pm 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1171

Rack travel in mm : 10.70
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 303.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.35
Rated speed rpm : 1050
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 6.50

Testing:

Rated speed rpm : 275
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.60
Tolerance mm : \pm 0.05

Rated speed rpm : 980
rack travel mm : 12.35
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 12.60
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 775

Pressure hPa : 450
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Pressure hPa : 170
rack travel mm : 9.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.60
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 184.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 670

Injection pump
Pump designation : PE6P120A320RS7438
EP type number : 0 412 626 965

Governor
Governor design. : RQV275...1150PA1296K
Governor no. : 0 421 815 523

Cust. part No. : 1316183

Customer-spec. information

Customer : DAF
Motor : PF 235 M
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.50
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1201
guide sleeve
travel mm : 10.07
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 811
guide sleeve
travel mm : 6.79
Tolerance mm : \pm 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.85
Tolerance mm : \pm 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1321

Rack travel in mm : 12.25
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 259.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.20
Rated speed rpm : 1185
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1310
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 7.60

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 395

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 1130
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.25
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 13.45
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 12.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Rated speed rpm : 1150
rack travel mm : 13.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 875
Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 450
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Pressure hPa : 150
rack travel mm : 9.70
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 232.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.25
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 671

Injection pump
Pump designation : PE6P120A320RS7421
EP type number : 0 412 626 956

Governor
Governor design. : RQV275...1150PA1297K
Governor no. : 0 421 815 524

Cust. part No. : 1316184/1

Customer-spec. information
Customer : DAF
Motor : PF 212 M
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 231.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 16.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206
guide sleeve
travel mm : 10.12
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 813
guide sleeve
travel mm : 6.81
Tolerance mm : \pm 0.25

Rated speed rpm : 450

guide sleeve
travel mm : 3.85
Tolerance mm : \pm 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1329

Rack travel in mm : 11.10
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Del. quantity
cm3/1000 strokes : 231.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.10
Rated speed rpm : 1195

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1300

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.70

Tolerance mm : \pm 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1130
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 11.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 10.85
Tolerance mm : \pm 0.10

Rated speed rpm : 1150
rack travel mm : 12.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : \pm 0.10

Rated speed rpm : 875
Pressure hPa : -
rack travel mm : 8.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 420
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Pressure hPa : 150
rack travel mm : 9.20
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 207.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.15
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 138.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 4.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 673

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1300K
Governor no. : 0 421 815 527

Cust. part No. : 1315099

Customer-spec. information
Customer : DAF
Motor : XF 250 M
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.00
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1072
guide sleeve
travel mm : 10.16
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.20

Rated speed rpm : 701
guide sleeve
travel mm : 6.52
Tolerance mm : \pm 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 3.92
Tolerance mm : \pm 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1181

Rack travel in mm : 10.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 289.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.50
Rated speed rpm : 1045
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 6.50

Testing:

Rated speed rpm : 275
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 310

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 980
rack travel mm : 11.50
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 11.70
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 11.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 775

Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 9.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 11.70
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 188.0

Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 681

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1381K
Governor no. : 0 421 815 561

Cust. part No. : 1349846/0

Customer-spec. information
Customer : DAF
Motor : XF 250
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

Rack travel in mm : 11.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 17.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Speed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1055
guide sleeve
travel mm : 7.47
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.20

Rated speed rpm : 820
guide sleeve
travel mm : 5.14
Tolerance mm : \pm 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.34
Tolerance mm : \pm 0.25

Rated speed rpm : 1282
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1263

Rack travel in mm : 10.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500

Del. quantity
cm3/1000 strokes : 250.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.50
Rated speed rpm : 1045
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : $>$ 7.00

Testing:

Rated speed rpm : 275
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 11.50
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 11.70
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500

rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.20

Pressure hPa : 250
rack travel mm : 9.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : \pm 0.05
Del. quantity
cm³/1000 strokes : 289.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0 402 648 940

Injection pump
Pump designation : PE8P120A320LS7847-3
EP type number : 0 412 628 886

Governor
Governor design. : RQ300/950PA1032-11
Governor no. : 0 421 801 737

Cust. part No. : 0240740602

Customer-spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

L02

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1005
guide sleeve
travel mm : 6.69
Tolerance mm : \pm 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.63
Tolerance mm : \pm 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.35
Tolerance mm : \pm 0.10

Rated speed rpm : 800
guide sleeve
travel mm : 6.09
Tolerance mm : \pm 0.10

Rated speed rpm : 415
guide sleeve
travel mm : 3.72
Tolerance mm : \pm 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1160
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 864
guide sleeve
travel mm : 6.26
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 226.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1080
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.40
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 14.15
Tolerance mm : ± 0.10

Rated speed rpm : 870
rack travel mm : 14.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 14.40
Tolerance mm : ± 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.60
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 400

Pressure hPa : 450
rack travel mm : 12.90
Tolerance mm : ± 0.10

Pressure hPa : 300
rack travel mm : 11.90
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : > 220

Check
speed 1/min : > 80
Check
speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm	:	14.30
Tolerance mm	:	± 0.10

Aneroid pressure

hPa	:	-
Rated speed rpm	:	400
Del. quantity		
cm ³ /1000 strokes	:	107.0
Tolerance		
cm ³ /1000 strokes	:	± 1.0
Check tolerance		
cm ³ /1000S.	:	± 4.0
Speed		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000S.	:	12.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm ³ /1000 strokes	:	210.0
Tolerance		
cm ³ /1000 strokes	:	± 10.0
Check tolerance		
cm ³ /1000S.	:	± 14.0

LOW IDLE

Rated speed rpm	:	300
Rack travel in mm	:	5.50
Tolerance mm	:	± 0.10
Del. quantity		
cm ³ /1000 strokes	:	13.0
Tolerance		
cm ³ /1000 strokes	:	± 3.0
Check tolerance		
cm ³ /1000S.	:	± 6.0
Speed		
Tolerance		
cm ³ /1000 strokes	:	6.0
Check tolerance		
cm ³ /1000S.	:	10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 633

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQ300/1050PA1344
Governor no. : 0 421 801 821

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41R.7143
Power KW : 214.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.55

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 10.50

Rated speed rpm : 1103

Tolerance 1/min : \pm 8

Check
speed 1/min : \pm 13

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 71.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.80

Testing:

Rated speed rpm : 300

rack travel mm : 6.30

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 395

Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 11.55

Tolerance mm	:	±	0.05
Rated speed rpm	:		425
rack travel mm	:		12.75
Tolerance mm	:	±	0.10
Rated speed rpm	:		500
rack travel mm	:		12.75
Tolerance mm	:	±	0.10
Rated speed rpm	:		700
rack travel mm	:		12.50
Tolerance mm	:	±	0.15
Rated speed rpm	:		875
rack travel mm	:		11.90
Tolerance mm	:	±	0.15
Rated speed rpm	:		425
rack travel mm	:		13.30
Tolerance mm	:	±	0.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:		600
Pressure hPa	:		1200
rack travel mm	:		12.75
Tolerance mm	:	±	0.10

Rated speed rpm	:		600
Pressure hPa	:		-
rack travel mm	:		9.60
Tolerance mm	:	±	0.20

MEASUREMENT

Rated speed rpm	:		600
Pressure hPa	:		260
rack travel mm	:		10.40
Tolerance mm	:	±	0.20

Pressure hPa	:		420
rack travel mm	:		12.00
Tolerance mm	:	±	0.05

Start interlock

Rated speed rpm	:	>	100
Rated speed rpm	:	<	250

Check speed 1/min	:	>	80
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Check speed 1/min	:	<	260
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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:		1200
Rated speed rpm	:		500
rack travel mm	:		12.75
Tolerance mm	:	±	0.10
Del. quantity cm ³ /1000 strokes	:		245.0
Tolerance cm ³ /1000 strokes	:	±	4.0
Check tolerance cm ³ /1000S.	:	±	7.0

Aneroid pressure hPa	:		-
Rated speed rpm	:		600
Del. quantity cm ³ /1000 strokes	:		152.0
Tolerance cm ³ /1000 strokes	:	±	1.0
Check tolerance cm ³ /1000S.	:	±	4.0

STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		11.60
Tolerance mm	:	±	0.30
Del. quantity cm ³ /1000 strokes	:		105.0
Tolerance cm ³ /1000 strokes	:	±	15.0
Check tolerance cm ³ /1000S.	:	±	19.0

LOW IDLE

Rated speed rpm	:		300
Rack travel in mm	:		6.30
Tolerance mm	:	±	0.10
Del. quantity cm ³ /1000 strokes	:		23.0
Tolerance cm ³ /1000 strokes	:	±	3.0
Check tolerance cm ³ /1000S.	:	±	6.0
Speed	:		

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 739

Injection pump
Pump designation : PE6P120A320LS7904-1
EP type number : 0 412 626 964

Governor
Governor design. : RQ750PA1326
Governor no. : 0 421 801 815

Cust. part No. : 04222 3926 KY

Customer-spec. information
Customer : KHD
Motor : BF6M1015/C
Power KW : 239.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 200
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 300.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm	:	700
<hr/>		
Rack travel in mm	:	12.40
Tolerance mm	:	± 0.05
<hr/>		
Del. quantity cm ³ /1000 strokes	:	365.0
<hr/>		
Tolerance cm ³ /1000 strokes	:	± 1.0
<hr/>		
Check tolerance cm ³ /1000S.	:	± 4.0
<hr/>		
Spreed		
<hr/>		
Tolerance cm ³ /1000 strokes	:	5.0
<hr/>		
Check tolerance cm ³ /1000S.	:	9.0
<hr/>		

Rated speed rpm	:	300
Del. quantity cm ³ /1000 strokes	:	20.0
Tolerance cm ³ /1000 strokes	:	± 3.0
Check tolerance cm ³ /1000S.	:	± 6.0
Spreed		
Tolerance cm ³ /1000 strokes	:	8.0
Check tolerance cm ³ /1000S.	:	12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	745
guide sleeve travel mm	:	4.54
Tolerance mm	:	± 0.15
<hr/>		
Rated speed rpm	:	300
guide sleeve travel mm	:	1.24
Tolerance mm	:	± 0.20
<hr/>		
Rated speed rpm	:	860
guide sleeve travel mm	:	5.59
Tolerance mm	:	± 0.10

Rated speed rpm	:	271
guide sleeve travel mm	:	1.00
Tolerance mm	:	± 0.10
<hr/>		
Rated speed rpm	:	560
guide sleeve travel mm	:	3.24
Tolerance mm	:	± 0.10
<hr/>		
Rated speed rpm	:	1154
guide sleeve travel mm	:	12.00
Tolerance mm	:	± 0.10
<hr/>		
Rated speed rpm	:	1230
guide sleeve travel mm	:	13.50
Tolerance mm	:	± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	700
Aneroid pressure hPa	:	-
Del. quantity cm ³ /1000 strokes	:	365.0
Tolerance cm ³ /1000 strokes	:	± 1.0
Check tolerance cm ³ /1000S.	:	± 4.0
Spreed		
Tolerance cm ³ /1000 strokes	:	5.0
Check tolerance cm ³ /1000S.	:	9.0

CONTROL LEVER

control lever position degree	:	109.0
tolerance degree	:	± 4.0

RATED SPEED

rack travel mm	:	0.50
Tolerance mm	:	± 0.50
Rated speed rpm	:	900

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	:	750
rack travel mm	:	11.40
<hr/>		
Rated speed rpm	:	780
Tolerance 1/min	:	± 4

rack travel mm : 4.50
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 900

Rated speed rpm : 751
 rack travel mm : 11.40

Rated speed rpm : 781
 Tolerance 1/min : \pm 4
 rack travel mm : 4.50

rack travel mm : 0.50
 Tolerance mm : \pm 0.50

Rated speed rpm : 752
 rack travel mm : 11.40

Rated speed rpm : 782
 Tolerance 1/min : \pm 4
 rack travel mm : 4.50

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 900

Rated speed rpm : 753
 rack travel mm : 11.40

Rated speed rpm : 783
 Tolerance 1/min : \pm 4
 rack travel mm : 4.50

rack travel mm : 0.50
 Tolerance mm : \pm 0.50

Rated speed rpm : 754
 rack travel mm : 11.40

Rated speed rpm : 784
 Tolerance 1/min : \pm 4
 rack travel mm : 4.50

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 900

Rated speed rpm : 755
 rack travel mm : 11.40

Rated speed rpm : 785
 Tolerance 1/min : \pm 4
 rack travel mm : 4.50

rack travel mm : 0.50
 Tolerance mm : \pm 0.50

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 12.40
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 560

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 580

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.25
 Tolerance mm : \pm 0.75
 Del. quantity
 cm³/1000 strokes : 210.0
 Tolerance
 cm³/1000 strokes : \pm 20.0
 Check tolerance
 cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.04.98
Test oil : ISO 4113

Combination No. : 0 402 744 804

Injection pump
Pump designation : PES4P120A320RS7402
EP type number : 0 412 724 804

Governor
Governor design. : RQV275...1200PA1257K
Governor no. : 0 421 815 494

Cust. part No. : CCEP 5154A 66-238

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 04-02-26 A4
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 125
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.10
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : -0.30
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.
mm : 21.00
and maximum rack
travel : 13.00
Difference ° CS : 2.40

CRT ZERO POSITION

Rack travel in mm : 13.40
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 261.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -8.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 33.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1257
guide sleeve
travel mm : 9.18
Tolerance mm : \pm 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.52
Tolerance mm : \pm 0.20

Rated speed rpm : 888
guide sleeve
travel mm : 6.57
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 4.01
Tolerance mm : \pm 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1473

Rack travel in mm : 12.40
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 296.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1245

Tolerance 1/min : + 5
rack travel mm : -9.40
Rated speed rpm : 1405
Tolerance 1/min : + 15

rack travel mm : -12.90
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 250.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > -7.40

Testing:

Rated speed rpm : 325
rack travel mm : -8.90
Tolerance mm : + 0.10

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1200

Rated speed rpm : 850
rack travel mm : -1.00
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : -6.00
Tolerance mm : + 0.20

Rated speed rpm : 700
rack travel mm : -1.80
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200

Rated speed rpm : 1200
Pressure hPa : -
rack travel mm : -3.20
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1200

Pressure hPa : 200
rack travel mm : -2.40
Tolerance mm : + 0.20

Pressure hPa : 440
rack travel mm : -1.10
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 130
Rated speed rpm : < 275

Check
speed 1/min : > 110
Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 249.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
rack travel mm : -6.00
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : + 8.0
Check tolerance
cm³/1000S. : + 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : -8.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.98
Test oil : ISO 4113

Combination No. : 0 402 744 808

Injection pump
Pump designation : PES4P120A320RS7402
EP type number : 0 412 724 804

Governor
Governor design. : RQV275...1200PA1257
: -1K
Governor no. : 0 421 815 553

Cust. part No. : CCEP5166 66-238

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 04-02-26 A4
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 125
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.10

Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 13.00

Tolerance mm : + 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

°NW after s.o.d. : -10.30

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.

mm : 21.00

and maximum rack

travel : 13.00

Difference ° CS : 2.40

CRT ZERO POSITION

Rack travel in mm : 13.40
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 261.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -8.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 33.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1257

guide sleeve
travel mm : 9.18

Tolerance mm : \pm 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.52
Tolerance mm : \pm 0.20

Rated speed rpm : 888
guide sleeve
travel mm : 6.57
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 4.01
Tolerance mm : \pm 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1473

Rack travel in mm : 12.40
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 261.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 296.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1245

Tolerance 1/min : + 5
rack travel mm : -9.40
Rated speed rpm : 1405
Tolerance 1/min : + 15

rack travel mm : -12.90
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 251.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > -7.40

Testing:

Rated speed rpm : 325
rack travel mm : -8.90
Tolerance mm : + 0.10

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1200

Rated speed rpm : 850
rack travel mm : -1.00
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : -6.00
Tolerance mm : + 0.20

Rated speed rpm : 700
rack travel mm : -1.80
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200

Rated speed rpm : 1200
Pressure hPa : -
rack travel mm : -3.20
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1200

Pressure hPa : 200
rack travel mm : -2.40
Tolerance mm : + 0.20

Pressure hPa : 440
rack travel mm : -1.10
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 130
Rated speed rpm : < 275

Check
speed 1/min : > 110
Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 850
Del. quantity
cm3/1000 strokes : 249.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
rack travel mm : -6.00
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 153.0
Check tolerance
cm3/1000S. : + 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : 183.0

Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : -8.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.04.98
Test oil : ISO 4113

Combination No. : 0 402 776 803

Injection pump
Pump designation : PES6P120A720LS7107
: -1
EP type number : 0 412 726 805

Governor
Governor design. : RSV350...750POA520
: -1
Governor no. : 0 421 833 262

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM447 A
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5

L22

Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 77.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 13.80

Rated speed rpm : 785
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 13.80

Rated speed rpm : 786
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 13.80

Rated speed rpm : 787
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 13.80

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 13.80

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 13.80

Rated speed rpm : 790
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

LOW IDLE

control lever
position degree : 62.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.85
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 19.50
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.04.98
Test oil : ISO 4113

Combination No. : 0 402 066 710

Injection pump
Pump designation : PES6P110A120RS3357
EP type number : 0 412 016 754

Governor
Governor design. : RSV400...900P4A633
Governor no. : 0 421 833 541

Cust. part No. : 3934780

Customer-spec. information
Customer : CDC
Motor : 6CTA ELITE
Power KW : 207.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes	: 213.0
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 3.0
Spread	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 7.5

Rated speed rpm	: 400
Rack travel in mm	: 6.20
Tolerance mm	: ± 0.20
Del. quantity cm3/1000 strokes	: 24.0
Tolerance cm3/1000 strokes	: ± 2.0
Check tolerance cm3/1000S.	: ± 4.5
Spread	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension	
click setting x	: 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 900
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L26

Aneroid pressure hPa	: -
Del. quantity cm3/1000 strokes	: 213.0
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 3.0
Spread	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 7.5

CONTROL LEVER

control lever position degree	: 102.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 12.30
Rated speed rpm	: 960
Tolerance 1/min	: ± 5
Check speed 1/min	: ± 10

rack travel mm	: 6.40
Rated speed rpm	: 990
Tolerance 1/min	: ± 5
Check speed 1/min	: ± 10

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1100

rack travel mm	: 6.40
Rated speed rpm	: 990
Tolerance 1/min	: ± 15
Check speed 1/min	: ± 20

LOW IDLE

control lever position degree	: 77.0
tolerance degree	: ± 4.0

Control Lever difference

Grad	: 25.0
tolerance degree	: ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : < 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 6.20
Tolerance mm : \pm 0.20

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.35
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 6.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.04.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 079

Injection pump
Pump designation : PES4A95D320/3RS2952
EP type number : F 002 A10 030

Governor
Governor design. : RQV475...1250AB1329R
Governor no. : F 002 A30 004

Cust. part No. : 3933691

Customer-spec. information
Customer : CDC
Motor : 4BNA
Power KW : 59.6

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spread

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 475

Rack travel in mm : 5.35
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 15.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1310
guide sleeve
travel mm : 8.60
Tolerance mm : + 0.15

Rated speed rpm : 475
guide sleeve
travel mm : 1.90
Tolerance mm : + 0.20

Rated speed rpm : 930
guide sleeve
travel mm : 5.25
Tolerance mm : + 0.25

Rated speed rpm : 630
guide sleeve
travel mm : 3.30
Tolerance mm : + 0.25

Rated speed rpm : 1630

guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 87.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spread

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : + 6.0

RATED SPEED

rack travel mm : 9.00
Rated speed rpm : 1300
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1390
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1475

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 6.0

Control lever difference
Grad : 30.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 400

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.35
Tolerance mm : \pm 0.10

Rated speed rpm : 550

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.00
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 385

Check
speed 1/min : > 80
Check
speed 1/min : < 395

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.35
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed

MO2

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.98
Test oil : ISO 4113

Combination No. : 0 402 086 704

Injection pump
Pump designation : PES6P100B321RS3388
EP type number : 0 412 006 714

Governor
Governor design. : RSV400...1125POA693
Governor no. : 0 421 833 616

Cust. part No. : 51.11103-7607

Customer-spec. information

Customer : MAN
Motor : D0826 LE531
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 14.10
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 174.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 174.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.60
Rated speed rpm : 1175
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1270
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.40
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 14.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1125
rack travel mm : 13.60
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.10

Rated speed rpm : 1025
rack travel mm : 13.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.10
Tolerance mm : \pm 0.15

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.45
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 150
rack travel mm : 9.75
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 13.05
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 161.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 187.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.45
Tolerance mm : \pm 0.45
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.98
Test oil : ISO 4113

Combination No. : 0 402 086 705

Injection pump
Pump designation : PES6P100B321RS3388
EP type number : 0 412 006 714

Governor
Governor design. : RSV400...1125POA694
Governor no. : 0 421 833 617

Cust. part No. : 51.10100-7606

Customer-spec. information

Customer : MAN
Motor : D0826 LE527
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 13.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 104.4
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.10
Rated speed rpm : 1175
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1260
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.30
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 1125
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 150
rack travel mm : 10.00
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 13.20
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

M09

Aneroid pressure
hPa : 1500
Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 143.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
rack travel mm : 14.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 177.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.05.98
Test oil : ISO 4113

Combination No. : 0 402 646 955

Injection pump
Pump designation : PE6P120A320LS7834-1
EP type number : 0 412 626 857

Governor
Governor design. : RQV350...1050PA866
: -13
Governor no. : 0 421 813 954

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

CRT ZERO POSITION

Rack travel in mm : 14.70
Tolerance mm : ± 0.10

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 223.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200
guide sleeve
travel mm : 8.75
Tolerance mm : \pm 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.50

Tolerance mm : \pm 0.10

guide sleeve
travel mm : 4.10
Tolerance mm : \pm 0.20

guide sleeve
travel mm : 7.00
Tolerance mm : \pm 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 17.25
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 223.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.90
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.30

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 475

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.70
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 14.90
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600
Pressure hPa : 900

MEASUREMENT

Pressure hPa : 300
rack travel mm : -3.10
Tolerance mm : \pm 0.05

Pressure hPa : 600
rack travel mm : -1.10
Tolerance mm : \pm 0.10

Pressure hPa : 1350

rack travel mm : 0.20
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 235.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 243.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

REDUCED QUANTITY

Aneroid pressure
hPa : 1800
Rated speed rpm : 1050
rack travel mm : 12.60
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.98
Test oil : ISO 4113

Combination No. : 0 402 648 931

Injection pump
Pump designation : PE8P120A320LS7847-2
EP type number : 0 412 628 885

Governor
Governor design. : RQ300/950PA1032-10
Governor no. : 0 421 801 735

Cust. part No. : 0230741302

Customer-spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1005
guide sleeve
travel mm : 6.84
Tolerance mm : \pm 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.74
Tolerance mm : \pm 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 736
guide sleeve
travel mm : 6.13
Tolerance mm : \pm 0.10

Rated speed rpm : 415
guide sleeve
travel mm : 3.82
Tolerance mm : \pm 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1160
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 833
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 239.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : \pm 8
Check
speed 1/min : \pm 13

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 14.15
Tolerance mm : \pm 0.10

Rated speed rpm : 860
rack travel mm : 14.35

M17

Tolerance mm : \pm 0.10
Rated speed rpm : 820
rack travel mm : 14.65
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 14.80
Tolerance mm : \pm 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.60
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 400
Pressure hPa : 450
rack travel mm : 12.90
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 11.90
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $>$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $>$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.35
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.05.98
Test oil : ISO 4113

Combination No. : 0 402 666 804

Injection pump
Pump designation : PE6P120A320/3LS7893
EP type number : 0 412 626 952

Governor
Governor design. : RSV600...1050POA636
Governor no. : 0 421 833 544

Cust. part No. : 0270743902

Customer-spec. information
Customer : MB-NFZ
Motor : OM 441 LA
Power KW : 285.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-45-120-165-240
: -285
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 13.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 251.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 600

Rack travel in mm : 2.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 251.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 86.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.70

Rated speed rpm : 1115

Tolerance 1/min : \pm 5

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
rack travel mm : 12.70

Rated speed rpm : 1102
Tolerance 1/min : \pm 4

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1300

Rated speed rpm : 1071
rack travel mm : 12.70

Rated speed rpm : 1103
Tolerance 1/min : \pm 4

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1300

Rated speed rpm : 1072
rack travel mm : 12.70

Rated speed rpm : 1104
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1073
rack travel mm : 12.70

Rated speed rpm : 1105
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

rack travel mm : 12.70

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

rack travel mm : 12.70

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 630
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1075
rack travel mm : 13.70
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 14.75
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 14.35
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.75
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 9.60
Tolerance mm : \pm 0.05

Pressure hPa : 400
rack travel mm : 11.20
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 291.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

rack travel mm : 14.35
Tolerance mm : \pm 0.15

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 600
Rack travel in mm : 2.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.98
Test oil : ISO 4113

Combination No. : 0 402 676 839

Injection pump
Pump designation : PE6P120A320LS7898
EP type number : 0 412 626 957

Governor
Governor design. : RSV350...850POA683
Governor no. : 0 421 833 602

Cust. part No. : 0280743102

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 A
Power KW : 165.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 220
Tolerance l/h : + 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 191.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 191.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 89.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 875
rack travel mm : 11.70

Rated speed rpm : 940
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 876
rack travel mm : 11.70

Rated speed rpm : 941
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 877
rack travel mm : 11.70

Rated speed rpm : 942
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 878
rack travel mm : 11.70

Rated speed rpm : 943
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 879
rack travel mm : 11.70

Rated speed rpm : 944
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 880
rack travel mm : 11.70

Rated speed rpm : 945
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.10

M25

rack travel mm : 2.00
Rated speed rpm : 395

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.70
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.70
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 380
rack travel mm : 11.60
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 12.50
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.05.98

Test oil : ISO 4113

Combination No. : 0 402 678 827

Injection pump

Pump designation : PE8P120A321...886

EP type number : 0 412 628 805

Governor

Governer design. : RSV550...850POA574

: -1

Governer no. : 0 421 833 476

Cust. part No. : 0260741102

Customer-spec. information

Customer : MB-NFZ

Motor : OM442LA

Power KW : 329.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

M27

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 830

Rack travel in mm : 15.40
Tolerance mm : \pm 0.05

Del. quantity
cm3/1000 strokes : 264.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 3.90
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 830

Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 264.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 870
rack travel mm : 14.40

Rated speed rpm : 920
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 871
rack travel mm : 14.40

Rated speed rpm : 921
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 872
rack travel mm : 14.40

Rated speed rpm : 922
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 873
rack travel mm : 14.40

Rated speed rpm : 923
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 874
rack travel mm : 14.40

Rated speed rpm : 924
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 875
rack travel mm : 14.40

Rated speed rpm : 925
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 550
rack travel mm : 3.90
Tolerance mm : \pm 0.10

N01

rack travel mm : 2.00
Rated speed rpm : 560
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 830
rack travel mm : 15.40
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 15.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.40
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 500
rack travel mm : 12.35
Tolerance mm : \pm 0.20

Pressure hPa : 710
rack travel mm : 14.30
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 283.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 174.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 3.90
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.05.98
Test oil : ISO 4113

Combination No. : 0 402 746 632

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQ300/1050PA1340
Governor no. : 0 421 801 820

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE
Motor : 8460.41S.7031
Power KW : 254.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.95

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1110
guide sleeve
travel mm : 6.85
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.97
Tolerance mm : \pm 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 697

guide sleeve
travel mm : 6.13
Tolerance mm : \pm 0.10

Rated speed rpm : 399
guide sleeve
travel mm : 4.74
Tolerance mm : \pm 0.10

Rated speed rpm : 480
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 877
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 289.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED
rack travel mm : 11.90
Rated speed rpm : 1103
Tolerance 1/min : \pm 8
Check
speed 1/min : \pm 13

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 8.15

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.95
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 875
rack travel mm : 13.25
Tolerance mm : \pm 0.15

Rated speed rpm : 500
rack travel mm : 14.40
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 250
rack travel mm : 10.45
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 12.60
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 200
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 180
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 322.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.0

rack travel mm : 13.90
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.30
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.98
Test oil : ISO 4113

Combination No. : 0 402 746 633

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQ300/1050PA1344
Governor no. : 0 421 801 821

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41R.7143
Power KW : 214.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

N07

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.55

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 10.50

Rated speed rpm : 1103

Tolerance 1/min : \pm 8

Check
speed 1/min : \pm 13

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.80

Testing:

Rated speed rpm : 300

rack travel mm : 6.30

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 395

Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 11.55

Tolerance mm	:	±	0.05
Rated speed rpm	:		425
rack travel mm	:		12.75
Tolerance mm	:	±	0.10
Rated speed rpm	:		500
rack travel mm	:		12.75
Tolerance mm	:	±	0.10
Rated speed rpm	:		700
rack travel mm	:		12.50
Tolerance mm	:	±	0.15
Rated speed rpm	:		875
rack travel mm	:		11.90
Tolerance mm	:	±	0.15
Rated speed rpm	:		425
rack travel mm	:		13.30
Tolerance mm	:	±	0.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:		600
Pressure hPa	:		1200
rack travel mm	:		12.75
Tolerance mm	:	±	0.10

Rated speed rpm	:		600
Pressure hPa	:		-
rack travel mm	:		9.60
Tolerance mm	:	±	0.20

MEASUREMENT

Rated speed rpm	:		600
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Pressure hPa	:		260
rack travel mm	:		10.40
Tolerance mm	:	±	0.20

Pressure hPa	:		420
rack travel mm	:		12.00
Tolerance mm	:	±	0.05

Start interlock

Rated speed rpm	:	>	100
Rated speed rpm	:	<	250

Check speed 1/min	:	>	80
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Check speed 1/min	:	<	260
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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:		1200
Rated speed rpm	:		500
rack travel mm	:		12.75
Tolerance mm	:	±	0.10
Del. quantity cm ³ /1000 strokes	:		245.0
Tolerance cm ³ /1000 strokes	:	±	4.0
Check tolerance cm ³ /1000S.	:	±	7.0

Aneroid pressure hPa	:		-
Rated speed rpm	:		600
Del. quantity cm ³ /1000 strokes	:		152.0
Tolerance cm ³ /1000 strokes	:	±	1.0
Check tolerance cm ³ /1000S.	:	±	4.0

STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		11.60
Tolerance mm	:	±	0.30
Del. quantity cm ³ /1000 strokes	:		105.0
Tolerance cm ³ /1000 strokes	:	±	15.0
Check tolerance cm ³ /1000S.	:	±	19.0

LOW IDLE

Rated speed rpm	:		300
Rack travel in mm	:		6.30
Tolerance mm	:	±	0.10
Del. quantity cm ³ /1000 strokes	:		23.0
Tolerance cm ³ /1000 strokes	:	±	3.0
Check tolerance cm ³ /1000S.	:	±	6.0
Speed	:		

Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.04.98
Test oil : ISO 4113
Combination No. : 0 402 746 994
Injection pump
Pump designation : PES6P120A320RS7344
EP type number : 0 412 726 914
Governor
Governor design. : RQV275...1000PA1161
Governor no. : 0 421 814 100

Cust. part No. : CCEP 5143A 66-231

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 062045 E/41
Power KW : 249.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : -0.15
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 2.25

CRT ZERO POSITION

Rack travel in mm : 12.60
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 285.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -7.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 28.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1086
guide sleeve
travel mm : 8.09
Tolerance mm : \pm 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.66

Tolerance mm : \pm 0.25

Rated speed rpm : 793
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.25

Rated speed rpm : 343
guide sleeve
travel mm : 2.33
Tolerance mm : \pm 0.25

Rated speed rpm : 393
guide sleeve
travel mm : 2.95
Tolerance mm : \pm 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.72
Tolerance mm : \pm 0.25

Rated speed rpm : 1410
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1235

Rack travel in mm : 11.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1080
Tolerance 1/min : \pm 5

rack travel mm : -8.60
Rated speed rpm : 1215
Tolerance 1/min : \pm 15

rack travel mm : -12.10
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $<$ -5.70

Testing:

Rated speed rpm : 300
rack travel mm : -7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500

Pressure hPa : -
rack travel mm : -3.40
Tolerance mm : \pm 0.30

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 320
rack travel mm : -2.65
Tolerance mm : \pm 0.15

Pressure hPa : 640
rack travel mm : -0.70
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 225

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 284.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75

Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : -7.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.05.98
Test oil : ISO 4113

Combination No. : 0 402 776 803

Injection pump
Pump designation : PES6P120A720LS7107
: -1
EP type number : 0 412 726 805

Governor
Governor design. : RSV350...750POA520
: -1
Governor no. : 0 421 833 262

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM447 A
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5

N15

Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 77.0

tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 13.80

Rated speed rpm : 785
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 13.80

Rated speed rpm : 786
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 13.80

Rated speed rpm : 787
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 13.80

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 13.80

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 13.80

Rated speed rpm : 790
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

LOW IDLE

control lever
position degree : 62.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

N17

Rated speed rpm : 100
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.85
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.05.98
Test oil : ISO 4113

Combination No. : 0 402 076 790

Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV400...1100P2A599
: -5
Governor no. : 0 421 833 525

Cust. part No. : RE66242

Customer-spec. information
Customer : DEERE
Motor : 6081TF001
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

N18

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever

position degree : 97.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.50

Rated speed rpm : 1160
Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1215
Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55
Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1225
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.05.98
Test oil : ISO 4113

Combination No. : 0 402 746 611

Injection pump
Pump designation : PES6P120A32ORS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1400PA1279K
Governor no. : 0 421 815 508

Cust. part No. : 3866783

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

N22

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 186.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : \pm 0.20

Del. quantity
cm3/1000 strokes : 28.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 5.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1455
guide sleeve
travel mm : 9.16
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.39
Tolerance mm : \pm 0.20

Rated speed rpm : 931
guide sleeve
travel mm : 5.67
Tolerance mm : \pm 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.18
Tolerance mm : \pm 0.25

Rated speed rpm : 1860
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 186.5
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 121.5
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1465
Tolerance 1/min : \pm 5

rack travel mm : 6.80
Rated speed rpm : 1580
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1725

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 48.5
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 8.60

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.20

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1400
Pressure hPa : 1200

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : 9.65
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1400

Pressure hPa : 620
rack travel mm : 12.30
Tolerance mm : \pm 0.20

Pressure hPa : 280
rack travel mm : 10.65
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check
speed 1/min : > 80
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.00
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 98.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 170.5
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet